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Montague Stanley A.R.S.A. W. Miller

DERWENT WATER.

THE

ROD AND THE GUN;

BEING

TWO TREATISES

ON

ANGLING AND SHOOTING

BY

JAMES WILSON, F.R.S.E.

AND BY

THE AUTHOR OF

THE OAKLEIGH SHOOTING CODE.

NEW EDITION.

EDINBURGH:
ADAM AND CHARLES BLACK, NORTH BRIDGE.
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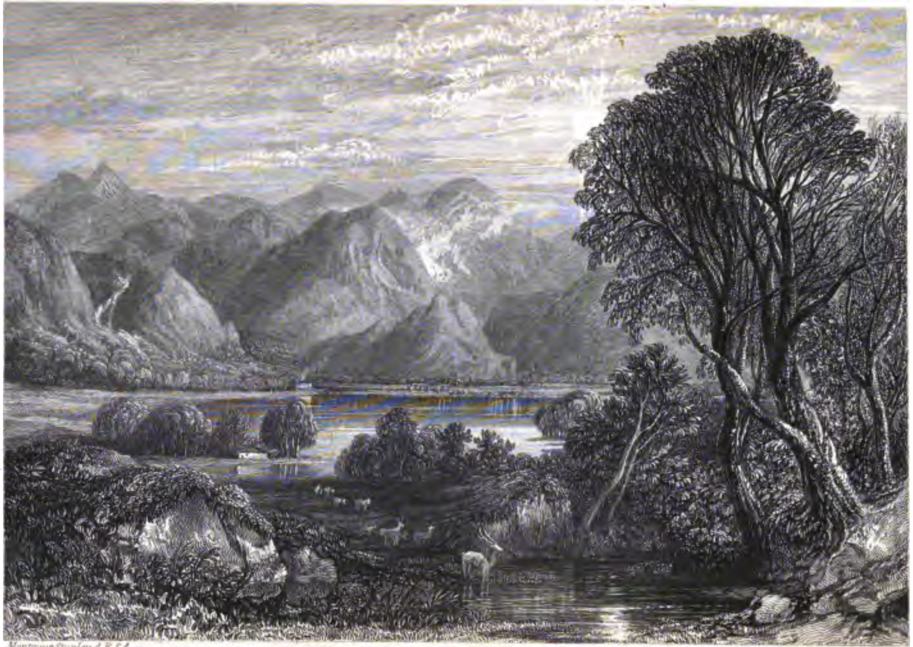

Montague Stanley A.R.S.A.

W. Miller

DERWENTWATER.

Pure element of waters! wheresoe'er
Thou dost forsake thy subterranean haunts,
Green herbs, bright flowers, and berry-bearing plants,
Rise into life, and in thy train appear;
And through the sunny portion of the year,
Swift insects shine—thy hovering pursuivants:
But if thy bounty fail, the forest pants,
And hart, and hind, and hunter with his spear,
Languish and droop together.

WORDSWORTH.

ANGLING.

CHAPTER I.

INTRODUCTORY OBSERVATIONS ON THE PRINCIPLES OF THE ANGLER AND HIS ART.

Angling, or the art of fishing with rod and line, includes those branches of the piscatorial trade which are usually followed, not so much for profit, as for pleasant recreation. That the practice of "casting angles into the brook" had its origin in necessity, the mother of so many inventions, can hardly be doubted; but it is equally clear that the refined skill exhibited in this pursuit at the present day has been derived from leisure and the love of sport, aided by the more delicate gear which modern ingenuity has invented for the deception of the finny race.

The comparative merits of angling, and of the kindred occupations of the fowler and the huntsman, are not likely to be determined by any portraiture which a lover of these exciting amusements might draw of their various excellencies, but must depend on the tone and temper of mind possessed by different persons, and their greater or less accordance with individual tastes. This much, however, may be safely stated as a general and admitted truth, that the value of a pursuit increases in proportion as it becomes attainable by the mass of our fellow-creatures; and as angling is a much cheaper and more convenient pleasure than either hunting or shooting, it may, in so far as regards those advantages, claim a decided preference. Be it remembered that Dr Johnson's description of a rod with a fly at one end and a fool at the other is not admitted among the memorabilia of the lovers of old Izaak Walton.

The recreation of angling has been followed by many of the best and wisest of men in modern ages. Sir Henry Wotton found from experience, that after prolonged study or worldly occupation, it was "a rest to his mind, a cheerer of his spirits, a diverter of sadness, a calmer of unquiet thoughts, a moderator of passions, a procurer of contentedness;" and besides the immediate excitement of the sport itself, few occupations yield so much pleasure to the lovers of rural scenery and the admirers of the picturesque. The most beautiful scenes in nature usually adorn or consist of the banks of lakes and rivers; and the composition of a perfect landscape, whether in nature or art, is incomplete without the accessory of either tranquil or flowing waters. The pursuits of the artist and the angler are therefore peculiarly compatible, and each lends an interest to the other.

> The lofty woods, the forests wide and long,
> Adorn'd with leaves and branches fresh and green,
> In whose cool bowers the birds with many a song
> Do welcome with their quire the summer's queen ;
> The meadows fair, where Flora's gifts among
> Are intermixed with verdant grass between ;
> The silver scaled fish that softly swim
> Within the sweet brook's crystal watery stream :
>
> All these, and many more of HIS creation,
> That made the heavens, the angler oft doth see ;
> Taking therein no little delectation,
> To think how strange, how wonderful they be ;
> Framing thereof an inward contemplation,
> To set his heart from other fancies free ;
> And whilst he looks on these with joyful eye,
> His mind is rapt above the starry sky.

This, in solemn truth, is the spirit in which angling, and each pleasant recreation should ever be regarded. Let all innocent amusements be sought after with assiduity and gladness, if in due subordination to more pressing or important duties,—and especially, with never ceasing reference to the great Giver of all earthly blessings, of which a tranquil and contented disposition is the chief. Let the angler in the midst of all his light amusement remember to what high and holy calling his ancient predecessors were promoted, and so walk

> " As ever in his great task master's eye,"

though casting not his nets by Galilean shore. When the cheerful spring and all its glad remembrances rejoice his heart, let him forget not in remuch of plenty; and though your satisfaction be not as ready as your wishes, yet you must hope still, that with perseverance you shall reap the fulness of your harvest with contentment. Then he must be full of love both to his pleasure and his neighbour—to his pleasure, which otherwise will be irksome and tedious—and to his neighbour, that he never give offence in any particular, nor be guilty of any general destruction: then he must be exceeding patient, and neither vex nor excruciate himself with losses or mischances, as in losing the prey when it is almost in the hand, or by breaking his tools by ignorance or negligence; but with pleased sufferance amend errors, and think mischances instructions to better carefulness."

In regard to the antiquity of angling, it has been traced by some to the time of Seth, who is asserted to have taught it to his sons; and so highly have others esteemed the knowledge of the art, as to maintain that its rules and maxims were engraven on those pillars by which an acquaintance with music, the mathematics, and other branches of useful knowledge, was preserved by God's appointment from extinction in the days of Noah. It is frequently alluded to in the holy Scriptures; as in Isaiah, xix. 8, "The fishers also shall mourn, and all they that cast angle into the brooks shall lament, and they that spread nets upon the waters shall languish;" so in the prophet Habakkuk, i. 15, "They take up all of them with the angle, they catch them in their net, and gather them in their drag; therefore they rejoice and are glad." We deem it unnecessary to multiply quotations from ancient authors, whether sacred or profane; but shall rest satisfied with pointing out, at the close of this portion of our volume, the principal works on angling which have appeared in our own language, and in relation to the practice of the art in British streams.

As expert angling never was and never will be successfully taught by rule, but is almost entirely the result of assiduous and long-continued practice, we purpose being very brief in our general disquisition on the subject. We shall commence by stating our belief that fly-fishing, by far the most elegant and interesting branch of the art, ought not to be regarded exclusively as an art of imitation. It no doubt depends on deception, which usually proceeds on the principle of one thing being successfully substituted in the likeness of another; but Bacon's distinctive definitions of simulation and dissimulation place the subject in a truer light. As simulation consists in the adoption or affectation of what is not, while dissimulation consists in the careful concealment of what really is—the one being a positive, the other rather a negative act—so the great object of the fly-fisher is to dissimulate in such a manner as to prevent his expected prey from detecting the artificial nature of his lure, without troubling himself by a vain effort to simulate or assume, with his fly, the appearance of any individual or specific form of insect life. There is, in truth, little or no connection between the art of angling and the science of entomology; and therefore the success of the angler, in by far the greater proportion of cases, does not depend on the resemblance which subsists between his artificial fly and the natural insect. This statement is no doubt greatly at variance with the expressed principles of all who have deemed fishing worthy of consideration, from the days of Isaiah and Theocritus, to those of Carrol and Bainbridge. But we are not the less decidedly of opinion, that in nine instances out of ten a fish seizes upon an artificial fly as upon an insect or moving creature *sui generis*, and not on account of its exact and successful resemblance to any accustomed and familiar object.

If it is not so, let us request to be informed upon what principle of imitative art the different varieties of salmon-fly can be supposed to bear the most distant resemblance to any species of dragonfly, to imitate which we are frequently told they are intended? Certainly no perceptible similarity in form or aspect exists between them, all the species of dragonfly, with the exception of one or two of the sub-genus Calepterix, being characterized by clear, lace-like, pellucid wings, entirely unadorned by those fantastic gaudy colours, borrowed from the peacock and other "birds of gayest plume," which are made to distinguish the supposed resemblance. Besides, the finest salmon-fishing is frequently in mild weather during the cooler seasons of the year, in autumn and early spring, several months either before or after any dragonfly has become visible on the face of the waters, as it is a summer insect, and rarely makes its appearance in the perfect state until the month of June. If they bear no resemblance to each other in form or colour, how much more unlike must they seem, when, instead of being swept like lightning down the current, as a real one would be, the artificial fly is seen crossing and recrossing every stream and torrent, with the agility of an otter, and the strength of an alligator? Or darting with regular jerks, and often many inches under water, up smooth continuous flows, where all the dragonflies on earth—with St George to boot—could not maintain their place a single second! Now, as it is demonstrable that the artificial fly generally used for salmon, bears no resemblance, except in size, to any living one; that the only tribe which, from their respective dimensions, it may be supposed to represent, does not exist in the winged state during the period when the imitation is most generally and most successfully practised; and if they did, that their habits and natural powers totally disenable them from being at any time seen under such circumstances as would give a colour to the supposition of the one being ever mistaken for the other; may we not fairly conclude that, in this instance at least, the fish proceed upon other grounds, and are deceived by an appearance of life and motion, rather than by a specific resemblance to any thing which they had previously been in the habit of capturing? What natural insect do the large flies, at which sea-trout rise so readily, resemble? These, as well as gilse and salmon, frequently take the lure far within the bounds of the salt-water mark; and yet naturalists know that no such thing as a salt-water fly exists, or at least has ever been discovered by their researches. Indeed no true insect inhabits the sea. What species are imitated by the palmer, or by three-fourths of the dressed flies in common use? An artificial fly can, at the best, be considered only as the representative of a natural one which has been drowned, as it is impossible to imitate the dancing or hovering flight of the real insect over the surface of the stream; and, even with that restricted idea of its resemblance to nature, the likeness must be scarcely perceptible, owing to the difference of motion, and the great variety of directions in which the angler drags his flies, according to the nature and special localities of the current, and the prevailing direction of the wind.

The same observations apply, with almost equally few exceptions, to bait-fishing. The minnow is fastened upon swivels, which cause it to revolve upon its axis with such rapidity, that it loses every vestige of its original appearance; and in angling with the par-tail, one of the most killing lures for large trout, the bait consists of the nether half of a small fish, mangled and mis-shapen, and in every point of view divested of its natural form.

Fly-fishing has been compared, though by a somewhat circuitous mode of reasoning, to sculpture. It proceeds upon a few simple principles, and the theory is easily acquired, although it may require long and severe labour to become a great master in the art. Yet it is needless to encompass it with difficulties which have no existence in reality, or to render a subject intricate and confused, which is in itself so plain and unencumbered. In truth, the ideas which at present prevail on the matter degrade it beneath its real dignity and importance. When Plato, speaking of painting, says that it is merely an art of imitation, and that our pleasure arises from the truth and accuracy of the likeness, he is surely wrong; for if it were so, where would be the superiority of the Roman and Bolognese over the Dutch and Flemish schools? So also in regard to fishing: The accomplished angler does not condescend to imitate specifically, and in a servile manner, the detail of things; he attends, or ought to attend, only to the great and invariable ideas which are inherent in universal nature. He throws his fly lightly and with elegance on the surface of the glittering waters, because he knows that an insect with outspread gauzy wings would so fall; but he does not imitate (or if he does so, his practice proceeds upon an erroneous principle), either in the air on his favourite element, the flight or the motion of a particular species, because he also knows that trouts are much less conversant in entomology than M. Latreille, and that their omnivorous propensities induce them, when inclined for food, to rise with equal eagerness at every minute thing which creepeth upon the earth or swimmeth in the waters. On this fact he generalizes,—and this is the philosophy of fishing.

We are therefore of opinion that all, or a great proportion, of what has been so often and sometimes so well said about the great variety of flies necessary to an angler,—about the necessity of changing his tackle according to each particular month throughout the season,—about one fly being adapted solely to the morning, another to noonday, and a third to the evening,—and about every river having its own particular flies, &c., is, if not altogether erroneous, at least greatly exaggerated and misconceived. That determinate relations exist between flies of a certain colour and particular conditions of a river, is, we doubt not, true; but these are rather connected with angling as an artificial science, and have but little to do with any analogous relations in nature. The great object, by whatever means to be accomplished, is to render the fly deceptive; and this, from the very nature of things, is continually effected by fishing with flies which differ in colour and appearance from those which prevail upon the water; because in truth, as we shall afterwards have occasion to show, none else can be purchased or procured. Even admitting, for a moment, the theory of representation, when a particular fly prevails upon a river, an artificial one, in imitation of it, will never resemble it so closely as to appear the same to those below (*i. e.* the fish): on the contrary, a certain degree of resemblance, without any thing like an exact similitude, will only render the finny tribe the more cautious through suspicion: while a different shape and colour, by exciting no minute or invidious comparisons, might probably be swallowed without examination. Indeed, it seems sufficiently plain, that where means of comparison are allowed, and where exact imitation is at the same time impossible, it is much better to have recourse to a general idea, than to an awkward and bungling individual representation. How often has it been asserted, with all the gravity of sententious wisdom, that the true mode of proceeding in fly-fishing is to busk your hook by the river-side, after beating the shrubs to see what colour of insect prevails. A very expert angler, who perhaps carried the opposite theory rather too far, although he always filled his pannier, was in the habit of stirring the briars and willows to ascertain what manner of fly was *not* there, and with that he tempted the fishes. The man was a humorist in his way, and in this particular case, an erroneous humorist, as many wiser folks have been when driven into one extreme by the foolish prevalence of its opposite. But he certainly had the advantage of his antagonists in a wider field of action and invention,—the world being all before him where to choose, and no especial pocket-book his guide.

It moreover argues no small conceit in our dubber of artificial flies, to fancy, that with the harlequin materials of his art,—his furs, feathers, silks, worsteds, gold and silver twist,

"White, black, and grey, with all their trumpery,"

and seated complacently by some majestic though unconscious river, he can rival nature. Look at his monstrous hands, and still more monstrous handiwork! Oh! Moses Harris, thou beautiful limner of the insect world, what would'st thou or thy gentle Drury, thine own considerate Goldsmith —not Oliver but Drew, the old *Orfèvre*—have thought of such proceedings? What do William Swainson, or John Curtis, or T. O. Westwood think of it even now? Ye who, pouring your very souls upon your lonely yet much loved labours, will bend for many an hour o'er some most fragile form of insect life, and after plying both pen and pencil all the live-long day, will rise dissatisfied with what you deem your vain attempts at representing nature, though other eyes are charmed by the exquisite beauty of your graceful outlines and your gorgeous hues,—what think ye, one and all, of artificial flies? We pause for a reply.

We have witnessed many a weakness in our day, and have more than once seen full grown men, not bad fishers either,—and some of them the fathers of large families of small children,—step with smirking face, not only towards, but actually into an unoffending stream, after having, in a few hasty minutes, dressed several flies, which they declare must unavoidably succeed as counterparts of nature. The last exhibition of the kind we witnessed, was that of a Highlander, a weak vain man, "dressed in a little brief authority," (the kilt, after all, is by no means an inconvenient garb to angle in), who busked a large red hairy fly, as round as an humble-bee, and declared it to be the fac-simile of a frail and fairy creature which we saw at that moment before us, moving like a mote of light along the glittering waters. Yet he killed a fine trout with it, after two or three lumbering casts. Now nothing could more than this completely prove the truth of two particular points. First, the benignity of our own disposition,—the disposition of us who, though long forgetful of entomology, possess above ten thousand kinds of insects,—in thus mildly submitting to see nature herself outraged by being "imitated so abominably;" secondly, the indiscriminate voracity of this particular trout, and so of trouts in general, in swallowing a piece of barbed steel, surrounded by fiery feathers, the likeness of which had never been seen by any one before,—still less behind. In truth, our natural feeling of anger was converted into blandness, by the very agreement with our theory, of an act in itself so reprehensible; and when our kilted friend cocked his eye towards ourselves, as much as to say, "What think ye now?" we submitted without a murmur. He maintains to this day that he has overthrown our theory, never to rise again,—he maintained it lately even to "Charles Edward," by Beauly's rocky stream,—and yet we forgive him from our heart. The reader will now know what it is to be a Christian.

But us let not be misunderstood, in regard to the principles which regulate the actual practice of the art. An accomplished angler knows by experience that he kills more fish with certain flies than others, and he also discovers that peculiar kinds are adapted to particular places, or vary with the season. In this he is a true Baconian, and should act accordingly, but let him not mistake the posture of affairs, or the great regulating principle by which they are directed. A certain form, size, or colour of artificial fly,—we must continue to use the name for want of a better,—is assuredly more *captivating* than another; it becomes in some way more deceptive, more delusively, as well as exclusively, adapted to the appetite of the finny tribes; but we repeat again, it is *not* because it resembles one fly more than another, because no fly swims at any time against the current of a raging river, several inches under water, and no artificial fly, worked as it usually is by the angler, exhibits the particular aspect of any insect whatsoever. If the gentle reader thinks otherwise, we are sorry for it, and shall be glad to read his reasons, either privately, or in print. Our chief consolation is, that each of us will continue to kill trouts to the end of (his or our predestined) time, the practice of both, we doubt not, being perfect in its way,—the main difference consisting in a theoretical opinion, which we have thought it right to express, but which fortunately will not affect the actual art of angling, if otherwise skilfully achieved.

But to conclude,—as the Rev. Mr ——— is wont to say, when fearfully far the distance to his latter end. One person thinks, that his artificial lure resembles the insects which he sees upon or near the surface of the water, and that his success in art results from that relation. Reader, art thou the man! If so, be pleased to look again. Out with your pocket-book, or bring it to us, and we will gladly undeceive you by the show of actual insects in all their pride of beauty, and multitudinous as the stars in Heaven. Another person believes, that in this particular branch the most skilful art makes no approach to living nature, and so believing, he wades into lake or river, and ever and anon the stilly air reverberates with a splashing sound, and golden sands grow dim by comparison with lustrous broad-finned forms which lash the "indignant shore,"—so potent is the rod of this enchanter. Reader, can he also deem that his success depends on individual imitation! We regret that by an oversight of the Publishers there is no portrait prefixed to this volume, otherwise we would have boldly turned to it and said—"Behold the man."

We speak, however, on the present department of our subject in sad and serious earnest, because the novelty of our notions on this head has brought us some discredit with the gentle craft, and induced the belief, that we maintain a theory which we do not practise. Now the truth is, that our practice does not greatly differ from our neighbour's, and that the angling world, in general, though theoretically wrong, is itself also usually right in its actual doings. At all events, it catches multitudes of fishes, which is one great test of truth. Of course, every man is free to maintain his fixed opinion, and on this principle we desire to state, as we have already done, and are still about to do, our own. We never could ourselves perceive any resemblance whatever between any kind of artificial fly, and any known insect in the natural state. Whether we are unusually deficient in the sense of perceiving similitudes, or are more than usually endowed with the perception of disresemblances, we cannot say, but this we know,—that possessing the largest collection of insects in Scotland, we recently desired to be brought to us for examination, the whole stock in trade of an extensive and skilful fly-dresser, and on comparing his collection with our own, we could not find a single specimen in the one which in any reasonable way tallied with a single individual in the other. We really could not help it. We had no personal interest to maintain, and were influenced solely by a love of knowledge. We desired to ascertain the fact, and having ascertained it, we now state it,—meaning no offence. But as it is actually true, that flies made of fur and feathers, with silken heads, golden ribs, worsted bottoms, hair legs, and steel tails, bear no resemblance to winged insects instinct with life, and composed, in their own slight way, of flesh and blood (without bones),—we cannot conceive why our beloved brethren of the angle should persist in the belief, that their success depends on the *special* likeness which their own garish gear bears to any fixed familiar form of insect life. That the successful practice of the art depends, at least at times, in some small measure, on the choice of flies, is admitted,—for we know that determinate relations exist between artificial flies of a certain colour, and particular conditions of a river as to size and season; but these relations are rather connected with angling as a peculiar art (*ars celare artem*), than as bearing reference to any special analogies of nature.

It is admitted, that during mid-summer, when the weather is calm, the sky clear, and the river low, and when what is called fine fishing is necessary, such imitation as is possible, both of the appearance and motions of the natural fly, may frequently be tried with advantage; in which case the tackle may be allowed to drop gently down the stream: but it more usually happens, from the style of fishing practised during the vernal and autumnal states of a river, that the hook is not deceptive from its appearing like a winged fly which has fallen from its native element, but from its motion and aspect resembling that of some aquatic insect. When the end of the line first falls on the surface of the water, the fish may be deceived by the idea of a natural fly; and it is on that account that the angler should throw his tackle lightly and with accuracy, and it is on that account also that we would advise the more frequent throwing of the line: but so soon as the practitioner begins to describe his semicircle across the river, the character of the lure is changed, and the trout then seizes the bait, not as a drowning insect, but as a creature inhabiting its own element, which had ventured too far from the protection of the shallow shore or the sedgy bank. That this is the case, a subsidiary argument may also be drawn from the fact, that in most rivers the greater number and the finest fish are generally killed by the drag-fly, which, during the process of angling, swims an inch or two under water. It is sometimes even advisable so to angle as to convert into drags all the flies in use.

We have many a time and oft in early life (even in maturer manhood), whether in smooth expanded lake, or the still stretches of some goodly river, when a sudden lull of wind has fallen upon the waters, and every grey gigantic stone, or craggy rock, or old fantastic tree with silvery stem, was seen reflected in the liquid mirror; when radiant clouds of snow reposed their castellated glory 'mid the cerulean depth of the inverted sky (yet gazing with grateful heart on that far beaming splendour, which we almost feared to break by word or motion, and of which ourself, a sinful creature, was momentarily made a meet partaker), we have then proceeded with our work, as follows. Instead of dragging the cast of flies rapidly and continuously along the surface, as is our wont when breezy winds are blowing, and pool or lake

> With pleasure fills,
> And dances with the daffodils,

we throw as long a line as we are able—the reader may well suppose it long—and allow it to lie for several seconds, as if in grim repose. We then point our top towards the water, lowering it to within a foot or two of the surface, and next with slow but sure alternate jerks, somewhat after the mode of salmon fishing, still keeping the point down, we bring the lure towards us. The entire tackle being under water, no disturbance takes place except the gentle *prowing* of the line, just where it emerges near the rod; the flies themselves being far away, and at some depth beneath the surface. Any slight alarm caused by their first descent upon the breezeless water has now subsided, and as they—three favourite flies which we are now to name—do hold the even tenor of their way towards the unrippled shore,—

"Sam Slick" leading, the "Professor" mid-way, and "Long Tom" at the lag end, all as it were hastening homeward with rapid strides,—no marvel that the attention of some magnificent three pounder, lying in wait below, is suddenly excited:—he rises upwards, at first sedately like a king in court, then the broad pectorals are expanded, as quickly closed, the deep rudder is waved from side to side with powerful sway, a rapid dart ensues, a single pectoral is again protruded for a moment, a slight and instantaneous turn takes place, the jagged jaws are closed, he has seized the Professor, and goes down head foremost with a most indignant flourish of the tail! Now he may certainly do what he likes with his own, but gentle reader, the *tackle* is either yours or mine. For the sake of illustration let us suppose it yours. Up then with the tip of your rod, which, owing to the dream-like calm already so well described, and for reasons just assigned, is pointing downwards, and almost in a continuous direction with the line—a most dangerous posture, seeing that the tug of war then rests entirely on the latter,—so up with your rod—which action also serves to strike the fish—and let the reel ring out as it may. Down he continues to go, Sam Slick beat by a couple of lengths, the Professor engulfed, and invisible even to kelpie's eye, and Long Tom also diving downwards, *nolens volens*, at a fearful rate, but wondering greatly what to make of such a sudden change from softly shaded light to dingy darkness. Our spotted friend now pauses for a moment, the line slackens, and your heart, though a bold one, beats with fear, for you think him gone for ever; but no, the tightened line and trilling reel reassure your doubting grasp, and away he goes again, launching lake-ward, as if he really thought of crossing over. Now this freak wont suit you if you are wishing only to wade, have no boat, and can't swim; so (but not ungently) try to check his speed, or wheel him round, and as one good turn deserves another, he may have his own way on the gridiron towards night. Neatly done, youngster. Now he goes onwards right or left, perhaps comes pretty quickly towards you, as if to enquire by whom has been disturbed his solitary reign (reel up, and keep no slack upon your line)—give way again, for behold another burst of virtuous indignation, followed by a sudden spring of at least a yard into the air. Never mind,—you have proved a tenacious hold,—he begins to *pech*, and will soon be mollified to your content. He now takes a quiet and rather disagreeable kind of tugging range along the shore, perhaps with no bad intention, nor any definite object in view, but really looking at times as if he were in sober search of some quiet landing-place. Do you the same. Behold how sweet a harbour close at hand,—small gravelly stones, and sand, and broken shells, a fairy haunted haven, the shelving neither sudden nor much prolonged, the bank—"small by degrees and beautifully less." What would ye more, so lead him gently inwards. By Jupiter! he makes another run and tries to *dig*, but can't. Alas! poor Yorick! His movements now are heavy, as if his fins were lead, his mouth is opened wide (see how the fierce Professor, with deep sunk barb, doth hang upon his tongue), languid and sore distressed he wavers to and fro, as if some thickening haze suffused his sight,—he shows his broadening side, blazoned with pearls and gold. How beautiful he looks, as nearing the pebbly shore, his dorsal fin dimples the shallower depths,—no creature swims so softly as a fish. Give him the option now, once more, of land or water. Shorten your line to the utmost, but take care of the top knot, for it does no good within the ring; now he enters the hoped for haven,—lead away, my hearty,—he turns on one side (oh! goodly gut be strong), his head is out of water, his gills heave, there is a suspicious looking movement of the pectoral fins, but your hand has grasped his body just above the tail, and, in another moment, you are sitting together on the green sward, as if you had known each other all your lives. *Sic transit gloria truttæ.*

Now, of the noted flies above named, (and we have performed the same feat with each and all), none of the three resembles, or was ever intended to resemble, nature. We ourself invented, in a wayward hour, both Sam Slick and Long Tom, and the Professor, as is well known to the world in general, was called into existence by a younger brother of our own, whose merits in that and many other matters need not our feeble praise. We mean no offence, but if any created creature, from an angler to an angel, alleges that any trout could have a foreknowledge of our invention, or that of our gifted brother, and that it views our flies as "old familiar faces," we blush not to say he lies—under a huge mistake.

Nevertheless, as we know that the progress of truth, though slow, is certain, and having no desire to proselytise, we merely commend our views to the considerate reader, and shall now proceed to explain a few practical principles of the art, as usually received and followed.

The great secret in fly-fishing, after a person has acquired the art of throwing a long and a light line, is perseverance,—that is, constant and continuous exertion. Fish are whimsical creatures, even when the angler, with all appliances and means to boot, is placed apparently under the most favourable circumstances. Let him, however, commence his operations with flies, which, upon general principles, he knows to be good,—for example, a water-mouse body and dark wing, hare-ear and moorfowl wing, red hackle and teal or mallard wing. It may frequently happen that for an hour, or even two hours, he will kill nothing; but then it will as often happen, that for another couple of hours, he will pull them ashore with a most pleasing celerity.

Awake but one, and, lo, what myriads rise!

Next comes a pause of another hour or more, during which little or nothing is obtained, so that if the intermediate period is frittered away on green banks, eating biscuits, success is doubtful or impossible. We believe that the appetites and motions of the finny tribes are regulated and directed by certain (to us) almost imperceptible changes in the state of the atmosphere, with which, as they do not proceed from any determinate or ascertained principles of meteorological science, it is not easy for the angler to become acquainted; and therefore the only method to remedy the *désagrément* thus arising, is to fish without ceasing so long as he remains by the "pure element of waters." The art of angling, if worthily followed, and with an observant eye, will probably one day or other be the means of throwing considerable light on the science of electricity, at present one of the most obscure, though at the same time the most important and pervading, of all the subjects of physical learning. Professor Forbes has promised us to do something in this line, and will give in his "Report" the first time the British Association holds its meeting at Aberfoyle or Rowardennan.

The best *natural* flies, either to use fresh, or to serve as models for the artificial kinds, are—*First*, the different sorts of stoneflies (*Phryganea* and *Limnephilus*), which are usually found by the water side. Their common colours are various shades of brown; they have pretty long feelers or antennæ, which in a state of repose are bent over their shoulders and along their sides; their wings are held decumbent, or close to the sides. They fly heavily, and are produced from aquatic larvæ called caddis-bait or caseworms, remarkable for their curious dwelling-places, which are hollow tubes composed of sand, small shells, and pieces of wood, agglutinated together, and made heavier or lighter according to circumstances, that they may the more easily sink or swim. They are open at either end, and the worm crawls along the stones and gravel, by protruding its legs at the anterior extremity. They disencumber themselves from their aquatic habitations, and assume the winged state in spring and the earlier part of summer. *Secondly*, the different kinds of May flies (*Ephemeræ*), called green drakes, &c. are also produced from larvæ, which, for a long time previous to their appearance as perfect insects, have inhabited the waters. There are many species of this genus, all of which are greedily sought for by trout. They are easily known by their tapering abdomens, veined wings, short antennæ, and the long slender setæ or hairs which terminate their bodies. They chiefly abound from May to midsummer. *Thirdly*, The small black or ant-fly, is the winged female of the common black ant, and occurs in the nests or hills of that insect during the summer and autumnal months.

There is scarcely any season of the year, excepting an ice-bound winter, in which an experienced angler may not successfully ply his trade.* In the midsummer season, when the pools are very clear and shallow, and the streams almost dried up, little can be done without a stirring breeze; so also after a heavy summer flood, immediately ensuing a continuance of dry weather, when the mountain torrents are a sheet of dingy foam, and the crystal depths of the river are converted for a time into an opaque flow of muddy water, the fly-fisher's occupation's gone. But when the turmoil ceases, and the soft south wind begins to disperse or break in upon the dense array of clouds, so as to chequer the streams, and rocks, and "pastoral melancholy" of the green mountains with the enlivening beams of the returning sun, with what pleasure does the angler approach the banks of a favourite and accustomed river? How various and delightful are his sensations! Custom cannot stale their infinite variety. On the contrary, the longer and more assiduously the pleasure is pursued, the greater the immediate enjoyment, and the more extended the train of agreeable remembrances for after days. How exciting the first cast into a breeze-ruffled pool, when the unwetted gut still lies in rebellious and unyielding circles on the surface, and yet almost at the same moment the sounding reel gives notice that these circles have been instantaneously stretched into a straight and tightened line! Then comes the long and continuous vibration of rod and reel, indicating the secure hooking of a goodly fish; or that sullen and pulse-like tug, by which a still goodlier one, when hooked in a deep pool, frequently manifests a desire to *dig* its way to the bottom; or that more interrupted music which results from the fantastic leaps of some whimsical individual, which skims and flounders on the top of the water like a juvenile wild-duck.

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* Although Isaak Walton, that "great master in the art of angling," informs us that no man should in honesty catch a trout till the middle of March, yet the grayling is in best condition during the winter season. "I do assure you," says Charles Cotton, in the second part of the Complete Angler, "which I remember by a very remarkable token, I did once take, upon the sixth day of December, one and only one, of the biggest graylings, and the best in season, that ever I yet saw or tasted; and do usually take trouts too, and with a fly, not only before the middle of this month, but, almost every year in February, unless it be a very ill spring indeed; and have sometimes in January, so early as new-year's tide, and in frost and snow taken grayling in a warm sunshine day for an hour or two about noon; and to fish for him with a grub it is then the best time of all."

The ordinary rules for fly-fishing are, to be most assiduous when the streams are somewhat disturbed and increased by rain,—when the day is cloudy, and the waters moved by a gentle breeze, especially from the south. If the river contains long placid pools, then a steady stirring breeze is very desirable, as angling in such situations resembles lake-fishing, where little can be achieved upon a glassy surface. If the wind is low and the weather clear, of course the best angling is in the swiftest streams, and in those curling and perturbed eddies which head the smoother depths. In fishing the smoother pools of no great depth, be careful that the shadows of neither rod nor angler come upon the surface; but if a person is skilful in other respects—and able to swim—he need not fear his own shadow on a broad river, but wade boldly down the centre of the stream, fishing its various depths and currents before him and on either side. In clear rivers the flies should be small and rather slender winged; but when the waters are muddy or increased by rain, a larger lure may be made use of. When the streams are brown with rain, an orange-coloured fly is good; in very clear weather a light-coloured one; and a dark fly, with a turn or two of gold or silver twist, is advisable for troubled waters.

Though a great deal, no doubt, depends on a quick eye and an active and delicate hand, we are no great advocates for what is called *striking* a fish. If a large trout rises in a deep pool, it may be of advantage so to do; and this will be sufficiently accomplished by inclining the rod quickly upwards or aside (if in the latter direction, then towards the tail of the fish, so as not to drag the fly from its mouth), in such a manner as to draw out a few inches of the line; for if the reel is not allowed to run, this operation is apt to snap the gut, or otherwise injure the tackle. But if a trout, whether great or small, rises in a current or rapid stream, the sudden change its its position, immediately after it has seized the fly, is generally quite sufficient to fix the barb, without any exertion on the part of the angler.

A variable state of the atmosphere is not good for angling; but neither is a uniformly dull gloomy day the most favourable. It is scarcely possible to lay down any general rules on this branch of the subject,—and this is of the less consequence, seeing that although we may "Tax the elements with unkindness," we can no more gladden a gloomy or subdue a glaring day, than when desirous to cross a ford, we can add a cubit to our stature. We have angled in vain through many a bright consummate morn,—no "dread magnificence" in heaven, and when the odds in our favour were as a salmon to a sand-eel. We have half-filled a pannier during an electric hailstorm, when "sky lowered and muttered thunder," and the aspect of the day was such as to deter more experienced though less zealous sportsmen from leaving the shelter of their homes. But if the river is not too low, we always prefer what in ordinary language might be called a fine cheerful day, more particularly if there is a fresh breeze. And what we would more particularly press upon the notice of the angler, as soon as he becomes master of the line, is that he should cast his flies more frequently than is the usual practice, and, generally speaking, fish rapidly. This should be more especially attended to in streams where the trout are numerous and not large.

Before enumerating and describing the different kinds of artificial flies in greatest repute, we shall mention a few of the principal materials used by the fly-fisher. The articles which he employs, in common with those who prosecute the other branches of the trade, are of course, rods, hair and gut lines, reels and hooks, panniers and landing-nets; but, in addition to these, he must be provided with a great variety of feathers, such as the slender plumes called hackles, from the necks and backs of common poultry, and the wings of a considerable number of birds, such as woodcocks, snipes, rails, plovers, ducks, grouse, partridges, and others. The furs of quadrupeds are also indispensable; and of these the most useful are hares, squirrels, moles, martens, mice, and water-rats.

The most esteemed hackles are the *duns.* The red, striped down the centre with black, and the red with a blackish root, are likewise useful, and more easily obtained. Since the introduction of Spanish poultry (by which name are designated the black breed with white tops), black hackles are now more common than formerly. The proper time for plucking hackles is about Christmas. The feathers of the ostrich and peacock are of frequent service; and for salmon and sea-trout the gaudy plumes of parrots and other brilliantly attired foreign species, however unlike the adornment of any known insects, ought to be collected by every fly-fisher.

The silks commonly used by the angler are of three kinds:—1*st*, Barbers' silk, used double, for splicing the top-pieces of rods; 2*dly*, a more delicate kind, for fastening on the rings through which the reel-line runs; 3*dly*, fine netting silk for whipping hooks and dressing flies. When we mention a pair of small pliers, fine-pointed scissors, needles, and wax, we have noted the principal materials for the angler's trade.

In regard to rods, their length and formation are so much matters of individual taste, that few general rules can be laid down upon the subject. According to Daniel, the wood should be cut about Christmas, and allowed to season for a twelvemonth. Hazel is very generally used, especially that from the *cob-nut*, which grows to a great length, and is for the most part very straight and taper. The but-end should rather exceed an inch in diameter, and the shoots for stocks, middle-pieces, and tops should be as free from knots as possible. The tops are made from the best rush ground shoots. All these pieces should be kept free from moisture till the ensuing autumn, when such as are required to form a rod are selected; and, after being warmed over a gentle fire, they are set as straight as possible, and laid aside for several days. They are then rubbed over, by means of a piece of flannel, with linseed oil, which produces a polish, and brings off the superfluous bark: they are then bound tight to a straight pole, and kept till next spring, by which time they will be seasoned for use. They are then matched together in due proportions, in two, three, or more parts, according to the desired length, or the opinion of the maker as to the number of pieces of which a rod should be composed. A well-constructed spliced rod of no more than two pieces, casts a line with fully as much force, neatness, and accuracy as any other; but it is inconvenient to a traveller, or to any one whose dwelling is not upon the water side. If the pieces are not ferruled, they must be spliced so as to join each other with great exactness. The principal object to be kept in view in the formation of rods in general is, that they should taper gradually and bend regularly. A frequent defect is their bending too much in the middle, owing to that part not being sufficiently strong.

We have said that the length of a rod is rather a matter of taste than of established rule. It must, however, bear a relation to the size of the river and the nature of the expected capture. A trouting-rod is usually made from 12 to 14 feet in length, though some prefer them of greater extent, as giving more command over lakes and spreading pools. It should be made as light as is consistent with strength and durability, as a heavy rod is cumbersome, fatiguing, and unwieldy; and a light one gives a more ready power in casting under hollow banks, or among trees or bushes. For pike and barbel a proper length is 16 feet; for perch, chub, bream, carp, eels, and tench, a shorter rod may be used; and 8 or 10 feet is sufficient for dace, gudgeon, ruff, bleak, &c. The portability of a rod depends of course on the number of joints; but its excellence being almost in the inverse ratio, care must be taken not to sacrifice its goodness merely for the sake of a convenient form.

According to Mr Bainbridge, the best rods are made from ash, hickery, and lancewood; ash for the bottom piece, hickery for the middle, and lancewood for the top-joints. If real bamboo can be procured of good quality, it is preferable to lancewood. Rosewood and partridgewood from the Brazils may also be used for the top-pieces. The extreme length of the top-piece is usually composed of a few inches of whalebone. The rings for the reel-line may be made by twisting a piece of soft brass-wire round a tobacco pipe, and soldering the ends together. They ought to diminish in size as they are made to approach the top, and must form a straight and regular line with each other when the rod is put up for use. But as few anglers require to make their own rods, we really deem it unnecessary to enter into full details of a mechanical practice which can only be sufficiently executed by an individual of professional experience. We shall merely mention, that, in addition to the woods already named, elder, holly, yew, mountain-ash, and briar, all of which are indigenous to this country, furnish materials to the makers of rods. In finishing a rod the usual varnish is copal varnish, or Indian rubber dissolved over a slow fire in linseed oil. It may be stained by a dilution of nitric acid or oil of vitriol. When rods are stored for the winter, after use, they ought to be rubbed over with tallow or salad oil.

As lines may be purchased from the tackle-makers at a cheaper rate than they can be made by an amateur, whose time and labour are of value for any other purpose, we shall not here enter into a detail of their formation. The best hair is procured from the tail of a well-grown stallion. Black hair is generally strong, but the colour is not very serviceable. Transparent and almost colourless hair is the most approved; and it ought to be round, regular, and free from blemishes. In the formation of lines each hair in a link should be equal, round, and even, which proportions the strength and prevents single hairs from breaking, and thus weakening the others. Chestnut or brown-coloured hairs are best for ground angling, especially in muddy water. Some anglers stain their lines a pale green for fishing in weedy waters. Black is occasionally used in streams which flow from mosses, and are themselves of an unusually dingy hue.

The following are some of the methods used by anglers for dyeing their lines, whether of hair or gut.

For a pale watery green.—To a pint of strong ale add (as soon as possible, as it is so apt to evaporate when good) half-a pound of soot, a small quantity of walnut leaves, and a little powdered alum (then drink the remaining pint of ale, if you happen to have drawn a quart); boil these materials for half or three-quarters of an hour, and when the mixture is cold, steep the gut or hair in it for ten or twelve hours.

For a brown.—Boil some powdered alum till it is dissolved; add a pound of walnut-tree bark from the branches when the sap is in them, or from the buds, or the unripe fruit. Let the liquid stand till nearly cool, and skim it; then put in the gut or hair, and stir it round for about a minute, or till it appears to have imbibed the desired tint. It ought not to be strongly tinctured, as it is apt to rot when too dark. For a *bluish watery tint* the above ingredients are also used, with the substitution of logwood instead of walnut.

For a yellow.—The inner bark of a crab-tree boiled in water, with some alum, makes a good yellow, excellent for staining tackle used among decayed weeds, the colour of which it closely resembles.

A tawny hue is obtained by steeping hair among lime and water for four or five hours, and then allowing it to soak for a day in a tan-pit. In the absence of other ingredients, both gut and hair may be easily stained by being left for twenty-four hours in strong tea, either with or without a few logwood scrapings. In the former case you had better not drink the tea.

The hair to be dyed ought to be selected from the best white. Silken or hempen lines may be tinted by a decoction of oak bark, which is said to add to the durability of these materials.

We shall speak of flies, both small and great, when we come to treat in more detail of trout and salmon. But we may here observe that the rich and varied supply of all kinds of tackle, which may be obtained in the shops of the principal dealers in our larger cities, induces us to abstain from extended descriptions of the angler's gear, especially of the different hooks employed in minnow and other bait-fishing, as such details are not very intelligible without the aid of numerous engravings. More knowledge will be gained by a few minutes' inspection of the articles themselves in the hands of an intelligent workman, than can be conveyed by the most elaborate treatise on the subject.

CHAPTER II.

ON THE GENERAL STRUCTURE AND PHYSIOLOGY OF FISHES.

SECTION I.

Introductory Observations.

The natural history of Fishes may be greatly promoted by anglers, and some knowledge of that history assuredly adds interest to the pursuits of the sportsman. He ought, therefore, to be able to skin and prepare his specimens, to observe and describe them with precision, and to dissect them with sufficient skill to take cognizance both of their external parts and their internal structure. Every naturalist, on the other hand, should be an angler, and that for more reasons than one. In the remoter and less peopled districts of the country, which so frequently present the most interesting fields for observation, he has no means of inspecting the finny tribes except by capturing them *propria manu*, and his doing so will greatly contribute, not only to his scientific knowledge, but his social comfort,—trouts when newly angled and nicely fried, being worthy of admiration, as choice productions of nature adorned by the skill of art. But this latter branch of our subject comes so home to the "business and bosoms" of all men, that we need not here dilate upon it.

In the hope, however, that some useful knowledge may be conveyed to the minds of our young readers through the medium of the present work, we intend to devote a portion of our space to a brief introduction regarding the organic structure and physiology of fishes. We know, from experience, that time may hang heavy even on the hands of anglers, who are seldom either feeble or faint-hearted men. We know that spring (all genial though it be in poet's fancy) has yet its frequent flaky snows on mead and mountain, its spiky ice along the crystal stream;—that summer in its sun-lit splendour suffers its long-enduring droughts, its sudden *speats*, and fearful overflows;—that melancholy autumn, in spite of all its mild effulgence, is not seldom violent, and perturbed

> "By lightning, by fierce winds, by trampling waves;"

—and that each of these conditions of time and space is adverse to the angler's art. Even with every sweet advantage yielded by cheerful spring, by glorious summer, by refulgent autumn (we now seek to sooth the seasons by more endearing terms), daylight does not last for ever, and so the angler cannot always ply his trade. Of night fishing we sel-

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dom think,—except in murmuring dreams of rheumatism and water-rats,—and eye-sight often fails,

> "When comes still evening on, and twilight grey
> Has in her sober livery all things clad."

Moreover, it is chiefly the home-haunting angler, he whose "lines have fallen in pleasant places," who dwells habitually by river side, or sees "beneath the opening eyelids of the morn" some broad ancestral lake gladdening his daily gaze,—in moonlight sparkling with bright columnar fire within its cincturing trees, or greener margins,—he, or some happy friend who shares his dwelling, alone can cast his angles in the night. No man, who "long in populous city pent," wanders for a time in lonesome gladness by the side of glittering waters, can wait with patience for a summer night, however beautiful may be the countless stars—

> "That sparkle in the firmament of June."

Whether he will or no, he must wend his way to grassy bank, or pebbly shore, or alder-skirted brink, and if there he fishes all the live-long day, he cannot fish at night, at least he ought not so to do. He who spareth not the rod hateth himself, and produces a degree of fatigue and satiety which ought never to mingle with his healthful toil.

Suppose, then, that the gentle reader does not fish at night, that he dines heartily (*sero sed serio*), imbibes moderately, takes tea sedately, and has still an hour to spare before a light supper,—let him read this book, and we promise to be as little prolix as we can. We take it for granted that his dress is decent and very dry,—we have seen a row of anglers sitting arrayed in blankets, and enduring rather to resemble ancient Romans than sit in wet ,—for all sportsmen should, at least to that extent, be influenced by a love of change,—that the mists of evening, like gigantic snakes of down, have stretched their folds "voluminous and vast" along the river courses, and that he has drawn himself and chair towards a clear light fire, with feet on fender (sofas are few in fishing districts), and conscience free from guile. Let him then read what follows, or portions of the same, but not aloud, lest he should disturb the slumbers of his quiet friend, who has just laid his forehead in his hands, and his hands on the mahogany. Peace to the ashes—of his cigar.

SECTION II.

External Form and Attributes of Fishes.

To aid the Angler in his scientific researches, as well as to add to the interest of the ordinary observer, we now proceed to a brief exposition of the principal characteristics of the *class* of fishes, and shall, at an after period, expatiate upon the more peculiar attributes of each particular kind, when we come to treat of the *species* in their order.

We need scarcely say to the student of nature, that the form and functions of fishes are as admirably adapted for easy movement through the water, as are those of birds for that aërial motion called flight. Suspended in a liquid element of almost equal specific gravity with themselves, external organs resembling those of birds in size, would have been disproportionate and unnecessary; but the air-bladder (the functions of which, by no means entirely understood, have never been satisfactorily explained in all their bearings) is known to possess the power of contraction and dilatation, the exercise of which is followed by a corresponding descent or ascent of the animal's body. Thus a small central and inconspicuous organ effects, in the easiest and most simple manner, the same object which even the soaring eagle or giant condor can only accomplish by great exertion of the wings, and after laborious and frequently repeated gyrations. We shall ere long, however, have occasion to remark in more detail, that the air-bladder, although essential to the economy of such species as possess it, is by no means indispensable as a general attribute of the class, as in many tribes it is entirely wanting. It is not even a generic characteristic, as it does not exist in the red mullets of the British seas, though possessed by the corresponding species of Asia and America,—while of our two kinds of mackerel, the so-called Spanish species (*Scomber colias*) is distinguished by a swimming bladder, and the common mackerel (*Sc. scomber*) does not possess that organ.

Fishes being without a neck, and the portion called the tail being usually equal at its origin to the part of the body from which it springs, the prevailing shape is somewhat uniform and continuous, diminishing gradually towards either extremity. Of this, the most elegant and characteristic form of fishes, the salmon and mackerel exhibit familiar examples. Yet a vast variety of shape, as well as of size and colour, is naturally presented by a class which now contains some seven or eight thousand known species; and no further illustration of the subject will be deemed necessary by him who has seen and remembers the difference between an eel and a skate.

The mouth of fishes either opens from beneath, as in the rays, or at the extremity of the muzzle, as in the great majority of species, or from the upper surface, as in a small foreign group called *Uranoscopus*, or moon-gazer,—an odd name for species, some of which have been alleged to bury themselves to the depth of twenty feet in sand,—a bed not easily obtained, and in no way fitted for astronomical observation. It also varies much in its relative dimensions, from the minute perforation of the genus *Centriscus*, to the vast expanded gape of the ugly angler-fish. We mean nothing personal in the last allusion.

The teeth of fishes are frequently very numerous, and are sometimes spread over all the bony parts of the interior cavity of the mouth and pharynx, that is, on the maxillary, inter-maxillary and palatal bones, on the vomer, tongue, branchial arches, and pharyngeal bones. In certain genera they exist in all those parts; while in others they are wanting on some, or are even entirely absent on all. The denominations of the teeth are derived from their position, that is from the bones to which they are attached, and are consequently as numerous as the varieties of their situation. In the upper portion of the mouth of a trout, for example, there are five rows of teeth. The single middle-row is placed upon the central bone of the mouth called the *vomer;* a row on each side of it is fixed on the right and left *palatal* bones, while the outer rows or those of the upper-jaw, properly so called, are situate on the *maxillary* bones. In the under portion of the mouth there are four rows, that is, one on each side of the tongue, and another external to these on each side of the lower-jaw. As to the form of teeth in fishes, the majority are hooked and conical, and more or less acute.

In the majority of osseous fishes, besides the lips, which, even when fleshy, having no peculiar muscles, can exert but little strength in retaining the aliments, there is generally in the inside of each jaw, behind the anterior teeth, a kind of membranous fold or valvule, formed by a replication of the interior skin, and directed backwards, of which the effect is to hinder the alimentary substances, and especially the water gulped during respiration, from escaping again by the mouth. This structure does not, as formerly supposed, constitute a character restricted to the genus *Zeus*, but exists in an infinity of fishes.

SECTION III.

Nutrition and Growth of Fishes.

The food seized by the teeth of the maxillæ, and detained by the valve just mentioned, is carried still further backwards by the teeth of the palate and tongue, when these exist, and is at the same time prevented by the dentations of the branchial arches from penetrating between the intervals of the branchiæ, where it might injure those delicate organs of respiration. The movements of the maxillæ and tongue can thus send the food only in the direction of the pharynx, where it undergoes additional action on the part of the teeth of the pharyngeal bones, which triturate or carry it backwards into the œsophagus. The last-named portion is clothed by a layer of strong, close set, muscular fibres, sometimes forming various bundles, the contractions of which push the alimentary matter into the stomach,—thus completing the act of deglutition.

The nutritive functions of fishes follow the same order of progression as those of the other classes of the vertebrated kingdom. They seize, and in some measure divide, their food with their teeth: they digest it in the stomach, from whence it passes into the intestinal canal, where it receives a supply of bile from the liver, and frequently a liquid similar to that of the pancreas; the nutritive juices, absorbed by vessels analogous to lacteals, and probably taken up in part also directly by the veins, are mingled with the venous blood which is flowing towards the heart, from whence it is pushed to the branchiæ, in which, coming into contact with the water, it is converted into arterial blood, and then proceeds to the nourishment of the whole body.

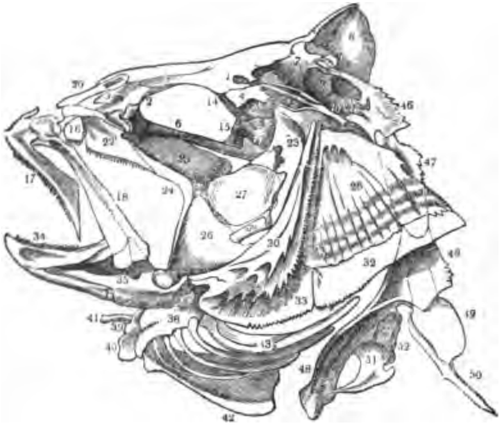
Fishes are in general extremely voracious, and the rule of "eat or be eaten," applies to them with unusual force. They are almost constantly engaged either in the active pursuit or patient waiting for their prey,—their degree of power in its capture depending of course on the dimensions of the mouth and throat, and the strength of the teeth and jaws. If the teeth are sharp and curved, they are capable of seizing and securing either a large and fleshy bait, or the slenderest and most agile animal: if these parts are broad and strong they are able to bruise the hardest aliment; if they are feeble or almost wanting, they are only serviceable in procuring some inert or unresisting prey. Fishes indeed, in most instances, show but little choice in the selection of their food, and their digestive powers are so strong and rapid as speedily to dissolve all animal substances. They greedily swallow other fishes, notwithstanding the sharp spines or bony ridges with which they may be armed; they attack and devour crabs and shell-fish, gulping them entire without the least regard to the feelings of their families: they do not object occasionally to swallow the young even of their own species, and the more powerful kinds carry their warfare into other kingdoms of nature, and revel on rats, reptiles, and young ducklings, to say nothing, gentle reader, of the ferocious shark, which not seldom makes a meal even of the lord of the creation. A particular friend of our own, now in Scotland, has his right leg in the West Indies, in consequence of an act of aggression alike unpleasant and uncalled for, and which a Christian-minded pedestrian finds it easier to forgive than forget. The species which live chiefly on vegetables are few in number, almost all fishes preferring pork to green peas.

The growth of these creatures depends greatly on the nature and amount of food,—different individuals of the same species exhibiting a large disparity in their dimensions. They grow less rapidly in small ponds or shallow streams, than in large lakes and deep rivers. We once kept a minnow, little more than half an inch long, in a small glass vessel for a period of two years, during which time there was no perceptible increase in its dimensions. Had it continued in its native stream, subjected to the fattening influence of a continuous flow of water, and a consequent increase in the quantity and variety of its natural food, its cubic dimensions would probably have been twenty times greater; yet it must have attained long prior to the lapse of a couple of years, to the usual period of the adult state. The growth itself seems to continue, under favourable circumstances, for a length of time, and we can scarcely set bounds to, certainly we know not with precision, the utmost range of the specific size of fishes. Salmon sometimes attain a weight of eighty pounds and upwards, and the giant pike of Kaiserslautern, is alleged to have measured nineteen feet, and to have weighed 350 pounds. No doubt, an incorrect allegation does not in any way increase the actual size of fishes, and few people now-a-days can take exact cognizance of what was done at Mannheim in the year 1497 ; but, even in these degenerate days, amid our own translucent waters, and among species in no way remarkable for their ordinary dimensions, we ever and anon meet with ancient individuals, which vastly exceed the usual weight and measure of their kind. But in spite of this, let no angler, whether in the bloom of early youth, the power of matured manhood, or with the silver locks of "hoar antiquity" above his wrinkled brow, ever induce within himself, or express to others, the belief, that at all times and places he is perpetually catching enormous trouts in vast numbers, because we happen to know that this is not the case. We don't insist upon any one weighing every fish he captures, but we request that no one after jerking out a few parr, will maintain next morning, or even that very night, that he has had a most toilsome but very glorious day, and has killed five dozen and four of the finest trouts the human eye ever gazed upon. "All men are liars"—and several anglers—is a proposition the exact import of which depends much on the mode of construction.

SECTION IV.

The Osteology of Fishes.

The most important characters of the sides of the head are derived from the pre-opercle, and the adjacent parts which form the gill-covers,—that is, the opercle, the sub-opercle, and the inter-opercle. The head of fishes usually consists of about sixty bones—the amount being sensibly greater in such species as have the upper maxillary subject to division. The



CRANIUM OF PERCH.

accompanying cut of the cranium of the perch, with the subjoined enumeration of the parts, will suffice to illustrate the subject with greater satisfaction to the reader than is likely to result from a more lengthened verbal disquisition.*

In regard to the texture of the bones of fishes, their skeletons are either *bony, fibro-cartilaginous,* or *truly cartilaginous.* These distinctive appellations must be borne in mind by whoever studies—in books—the natural history of fishes, as the great primary divisions of the subject are based upon the characters which the above terms indicate. The species distinguished by the last named character are the chondropterygian group, such as sturgeons, sharks, and rays, all of which exhibit, throughout the whole of their frame work, in their branchiæ (the external border of which is fixed to the skin, and through which the water is allowed to escape only by narrow openings), and in other important parts of their organization, distinctive characters which obviously separate them from all other fishes. They are in fact destitute of true bones, their harder parts consisting only of a homogeneous and semitransparent cartilage, which is merely covered on the surface in certain genera by a layer of small, opaque, calcareous granules, closely set together. In the Lampreys even this envelope is wanting, while among the *Ammocætes* the skeleton continues in an actually membranous condition. The sturgeons and chimeræ partake in some manner of the lamprey character in relation to the softness of their spines, but the first named genus is possessed of many true bones of the head and shoulder.

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* Enumeration of the principal bones of the head, with reference to the figures in the preceding cut.

Cranium.

1. Principal Frontal.
2. Anterior Frontal.
3. Ethmoidal.
4. Posterior Frontal.
5. (Basilary.)
6. Sphenoid.
7. Parietal.
8. Inter parietal.
9. Inter occipital.
10. Occipital lateral.
11. Great ala, or temporal ala.
12. Mastoidean.
13. (Rupes.)
14. Orbitary ala.
15. Anterior sphenoid.
16. Vomer.

Upper-Jaw.

17. Intermaxillary.
18. Maxillary.

Nasal, suborbitary, and supra-temporal bones.

19. (First suborbitary.)
20. Nasal.
21. Supra-temporal.

Palatal arch, temporal bones, &c.

22. Palatal.
23. Temporal.
24. Transverse.
25. Internal pterogoid.
26. Jugal.
27. Tympanal.

Opercular bones.

28. Opercle.
29. (Styloid.)
30. Pre-opercle.
31. Sympletic.
32. Sub-opercle.
33. Inter-opercle.

Lower-Jaw.

34. Dental.
35. Articular.
36. Angular.

(37.)
38.
39.
40. Hyoid and lingual bones.
41.
42.

43. Branchiostegous rays.

Other fishes differ in their osteological character chiefly in the hardness of their skeleton, and it is without reason that the fibro-cartilaginous kinds have been associated by some authors with the Chondropterygii. The calcareous matter, that is, the phosphate of lime, is deposited in layers and fibres in the cartilage which forms the basis of their bones, precisely in the same manner as among the hard-boned species, but less abundantly; and the texture of the bone never becomes so hard and homogeneous as among the osseous kind. Thus in *Tetradon mola* we perceive, as it were, only scattered fibres amid the membranes, and in *Lophius piscatorius*, they are nearly as soft. The other Tetradons and Diodons, the Balistes and Ostracions, have denser bones; and in some species these parts can scarcely be distinguished from those of the osseous fishes. It is certain, also, that the bony frame-work of the fibro-cartilaginous kinds is constructed on the same plan as that of the truly osseous species, and not in accordance with those of the Chondropterygii; and it is in opposition to the known truth of nature that both Artedi and Linnæus have denied them the possession of opercula and branchiostegous rays. The Balistes have even ribs,—their only osteological difference consisting in the granulation of their jaws; while the Syngnathi have regular bony jaws, although they want the ribs and branchiostegous rays.

The majority of osseous fishes have bones fully harder than those of other animals, and it is quite a gratuitous assumption to suppose that the observed longevity of certain species arises from the softer consistence of those parts. Certain fish bones, in fact, exhibit neither pores nor fibres, and appear almost vitreous to the eye. But neither the osseous nor the cartilaginous kinds have either epiphyses to the bones, or medullary canal within them; although there are some, such as the trouts, in which the tissue of the bones is more or less penetrated by an oily juice; while in others, such as the dory, the internal portion continues cartilaginous, while the surface is completely ossified. Finally, in certain species, while the general skeleton is very hard, particular portions of it are cartilaginous. Such are the bones which form the head of the pike.

When viewed in relation to their general structure, the bones of fishes, like those of other vertebrated animals, are composed of an organic base penetrated by earthy matter. The latter consists of phosphate of lime and of magnesia, with oxide of iron, supposed to be united to phosphoric acid. There is also a certain portion of subcarbonate of lime. The animal matter is of two kinds:—the one, of an azotised nature, forms the base of the cartilage; the other is fatty, in the form of a pervading oil. The cartilage of fish bones differs from that of mammalia and birds, in as far as it yields no gelatine when subjected to the process of boiling.

The head, possessing many more moveable parts than that of quadrupeds, is subdivisible into numerous regions, such as the cranium, the maxillæ, the bones beneath the cranium, and behind the jaws, and which aid the movement and suspension of the latter; the bones of the opercles, which open and shut the overtures of the branchiæ; the bones, almost exterior, which surround the nostrils, the eye, and the temples, or which cover a portion of the cheek. In the majority of fishes, the intermaxillary bone (17) forms the edge of the upper jaw, and has behind it the maxillary (18), commonly called the mystax, or labial bone. A palatal arch (22, &c.) constructed of many parts, constitutes, as among birds and snakes, a kind of interior jaw, and provides posteriorly an articulation to the lower jaw, which is usually composed of two pieces,—a dental and articular portion, 34 & 35.

Besides the somewhat complicated apparatus of the branchial arches, the hyoid bone bears on each side of it certain osseous rays, 43, which support the branchial membrane; and a peculiar kind of lid or clapper, commonly called the gill cover, and composed of three bony pieces (the opercle 28, the sub-opercle 32, and the inter-opercle 33) combine with that membrane to close the great opening of the gills. This covering articulates with the tympanal, 27, and plays upon the pre-opercle, 30. In the Chondropterygian groups, however, the general structure of these parts is much more simple.

The three opercular pieces just mentioned, do not of themselves effect the closure of those great clefts observable on each side of a fish, between the head and shoulder, and within which are the respiratory organs or branchiæ. This closure is completed by the *branchiostegous membrane*, which adheres to the hyoid bone. This bone is placed as in other vertebrated animals, but is always suspended to the temporal bones. It is composed of two branches, each consisting of five pieces, viz. the styloid, by which it is suspended to the temporal; two large lateral pieces, 37* & 38, placed one behind the other, and forming the principal portion of the branch (the posterior, 38, being that which attaches to the interoperculum); lastly, two small pieces, 39 & 40, placed one above the other at the anterior extremity of the branch, and serving to unite it with the corresponding portion of the other side. Anterior to this junction is the lingual bone, 41, and behind it, in the angle formed by the meeting of the two branches, and beneath the branchiæ, is a single piece, 42, usually vertical, which uniting with the symphyses of the humerals, forms what is called the *isthmus*,—separating the two branchial openings from below.

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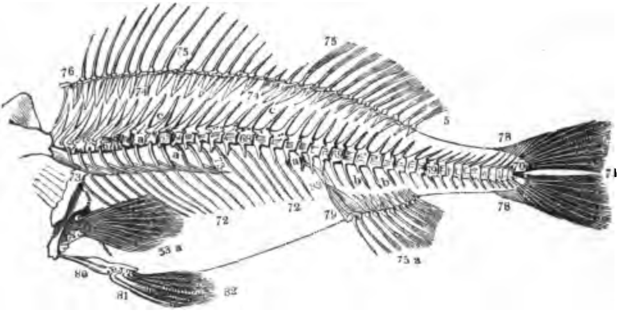
* No. 37 is invisible in our woodcut. The same may be noted regarding one or two other bones, enumerated in a preceding note, the names of which are enclosed in parentheses.



VERTEBRÆ, ETC. OF PERCH.

The bones of the body, or trunk, consist of the vertebræ of the back and tail, 67, 68, 69,—for we can scarcely say that there is any neck, and the sacrum is wanting; of ribs, 72, and the styles which frequently adhere to them, 73; of the inter-spinal bones, 74, which give support to the dorsal and anal fins, 75, and 75^{a}; and of the rays of those fins, 75, 75^{a}, and of the caudal, 78, 71. These rays, whether branched and articulated, or simply spinous, may be always divided lengthways into halves.

The vertebræ are characterised by the conical hollow on each side of their faces. Double hollow cones are thus formed in the interval between two vertebræ, filled by a soft membranous and gelatinous substance, which passes from one void to another by means of an opening through each vertebra, and thus forms, as it were, a gelatinous chaplet through the whole. As in the other vertebrated classes, there is an annular opening through the superior portion, for the passage of the spinal marrow.

Fish rarely possess a sternum properly so called, and when it does exist, it is formed of almost external pieces, which unite the inferior extremities of the ribs.

The anterior members, of which the external portion is commonly called the pectoral fin, 53[a], consist, in the first place, of a suite of bones on each side immediately behind the orifice of the gills, and which form a kind of frame on which the opercle rests when closed. These bones, usually attached to the head above, and uniting together below, form an osseous belt which almost encircles the body. Their inferior symphysis unites by ligaments to the tail of the hyoid bone, 42, (see cut of *Cranium*), and forms with it the *isthmus*, which separates the external openings of the gills from each other beneath, just as the cranium separates them above. This cincture, when complete, is composed on each side of three bones, which represent the shoulder and the arm, to which adheres posteriorly a group of two or three others, occupying the place of the fore-arm, and bearing the pectoral fin, which may be considered as the hand; lastly, there is almost always suspended a style, composed of one or two bones, 49, 50, which Baron Cuvier regards as the analogue of the coracoid bone.

The uppermost of these first three bones, 46, is usually forked, and attached by its two crests to the lateral crests of the cranium. It shews itself externally at the top of the branchial opening, resembling a scale, larger than the others, and sometimes toothed along its edges. The second, 47, continues along the margin of the branchial opening. The third, 48, always the largest, completes the cincture by uniting with its counterpart beneath the throat. To the inner surface of the last mentioned bone adheres a fourth, 51, and a fifth, 52, placed one above the other. The free side of these bones bears the pectoral fin, but by means of an intermediate range of four or five small bones, 53. These little osseous pieces may be supposed to represent the carpal series; and if so, then the two others, 51 & 52, will be the cubitus and radius. The third bone of the cincture, 48, which supports the two last named, will then necessarily represent the humerus, and the first and second, 46, 47, the shoulder blade. The style above alluded to, is shewn at 49 & 50.

To the outer edge of the so-called radial and cubital bones adhere the small flat bones supposed to represent the carpus, 53 (see cut of *Vertebræ*).

Their function is to support the rays of the pectoral fin, 53^a, however numerous these may be, with the exception of the first, which articulates directly with the radius or upper bone.

In regard to the bones of the hinder extremities which show themselves externally as the ventral fins, the *os innominata*, the thigh, the tibia, and the tarsus, are represented in fishes by a single bone, 80, usually of a triangular form, but more or less complicated by processes and projecting plates. Its posterior side affords attachment to the rays of the ventral fins, 81, 82. In eels and others, in which the ventral fins are wanting, this bone is also absent. These posterior members or ventral fins, much more variable in their position than the corresponding limbs of the mammalia, project sometimes in advance of, sometimes beneath, and sometimes behind the anterior or pectoral members. The rays of both these pairs of fins are divisible lengthways into halves, and with the exception of the outer ventral ray of the Acanthopterygians (which is spinous, 81), are almost always composed of joints or articulations, becoming, however, more solid at their base.

Besides the fins now mentioned, as representing the four external members of birds and quadrupeds, there are other single fins placed vertically, and which serve a fish somewhat in the same manner as a vessel is served by her keel and helm. Of these some, called *dorsal*, 75, are attached to the back, others, situate beneath, between the tail and abdomen, are named *anal*, 75^a, while a fine expansion which usually terminates the body, is termed the *caudal* fin, 71. All these vertical fins vary in different tribes, either in number or dimensions, or the nature of the rays by which they are supported, and which are sometimes spiny, sometimes branched, and composed of numerous articulations. We ought to have observed that even the double fins, or those disposed in pairs, also vary both in size, number, and structure; and that one or even both pairs are occasionally wanting, as in eels, which have no ventral fins, and murenæ, which have neither ventral nor pectoral fins. Indeed, the *Apterichti*, poor things, have no fins at all.

It is from a consideration of the structure, or rather of the texture and consistence of these rays, that the titles of two of the principal primary groups in Ichthyology have been derived. Those named *Malacopterygians* have all the rays of the fins articulated, and of a softer structure; while the *Acanthopterygians* are characterized by having at least a portion of their rays hard, simple, and spinous. These great divisions apply solely to the osseous or bony fishes. We have already mentioned that the cartilaginous kinds are distinguished by the title of *Chondropterygians*, while two lesser groups, in some respects intermediate between these and the preceding, fall under the orders *Lophobranchii* and *Plectognathi* of Baron Cuvier.

The skeleton of the Chondropterygians, such as sharks and rays, is composed of pieces consisting of no fibrous tissue characteristic of bone. The interior continues in a cartilaginous state, and the surface alone becomes indurated by the accumulation of small calareous granules, which produce externally a *stippled* aspect. The form of the cranium is similar to that of other fishes, but nevertheless consists of only one enclosure, without sutures. The face is very simple, with only two bones in the palato-temporal arch:—the first descending from the cranium at the articulation of the jaws,—the other representing the upper jaw, and bearing teeth. The maxillary and inter-maxillary bones are merely rudimentary. The under jaw has also but one bone (the articular) on each side, bearing the teeth; of the others only a single vestige is discoverable, concealed beneath the lip. The opercular apparatus is wanting, but the hyoidean and branchial structure is very conformable with the same parts in osseous fishes. Sharks have, moreover, opposite to the external attachment of each branchia, a slender bone, which may be regarded as the genuine vestige of a rib. The branchial system is situate further back than in osseous fishes, and hence, the humeral girdle just described, is also more posterior. The spinal ribs, if they exist, are usually very small, except in the sturgeons. In that genus indeed, the branchial system is in some respects intermediate between the cartilaginous and osseous fishes. Several bones of the head and shoulder are as hard as stone, yet the spine is almost as soft as that of lampreys.

SECTION V.

The Muscular Movements of Fishes.

THE vertebral column, composed of numerous articulations, united by cartilages which permit of certain movements, curves with great facility from side to side; but the vertical motion is much more restricted, chiefly in consequence of the projection of the upper and under spiny processes of the vertebræ. The great organ of movement in all fishes is the tail. The muscles, by which it is brought into play, extend in lengthened masses on either side of the vertebral column. The body, being supported chiefly by the swimming bladder (which, however, is absent in several species) is propelled forwards by the rapid flexure of the extremity acting laterally upon the resistance offered by the water. Generally speaking, neither the pectoral nor the ventral fins are of any material use during swift progressive motion; they rather serve to balance the body, or to aid its gentler movements while in a state of comparative repose. In *flying fishes*, as they are called, the pectoral fins are of such great length and expansion as to support these creatures in the air; and the strength of muscular action might probably suffice even for a longer flight, but for the necessity of constant moisture for the purposes of respiration. The drying of the gills in an individual of this class is attended by results analogous to those produced by submersion in the case of a land animal;—and a flying fish is obliged to descend to respire, in like manner as a swimming quadruped, or disguised mammiferous animal, as we may term a whale, is under the necessity of ascending for the same purpose.

The head of fishes exercises but a slight movement independent of the rest of the body, but the jaws, opercular bones, branchial arches, and other parts, are very free in their motions. The muscles, like those of other vertebrated animals, are composed of fleshy fibres more or less coloured, and of tendonous fibres of a white or silvery aspect. With the exception, however, of certain spinal muscles, which are sometimes of a deep red, the flesh of fishes is much paler than that of quadrupeds, and still more so than that of birds. In several species it is even entirely white.

SECTION VI.

The Nervous System, and Senses of Fishes.

As fishes respire through the intervention of water alone, that is, as they can scarcely avail themselves, in rendering their blood *arterial*, of anything more than the small portion of oxygen contained in the air which is suspended in the water, their blood is necessarily cold, and the general energy and activity of their senses are by no means so great as those of quadrupeds and birds. Their brain, also, though of similar composition, is proportionally much smaller, whether as compared with the total size of the body, with the mass of nerves which proceed from it, or with the cavity of the cranium in which it is contained. In the turbot (*Gadus lota*) for example, the weight of the brain to that of the spinal marrow is estimated by Carus to be as 8 to 12, and to that of the whole body as 1 to 720; and it has been ascertained that the brain of a pike weighed in proportion to the whole body as 1 to 1305. Now, in many small birds, the brain, viewed in relation to the rest of the body, is equal to a twentieth part. In the generality of fishes the spinal cord extends along the whole of the caudal vertebræ, and it is thus that it preponderates over the brain; but the fishing frog, or sea devil (*Lophius piscatorius*), the moon fish (*Lampris guttatus*), and a few others form exceptions to this rule,—the spinal marrow disappearing before it reaches the eighth vertebra. The brain of fishes by no means fills up the cavity of the cranium; and the interval between the *pia mater*, which envelopes the brain itself, and the *dura mater*, which lines the interior of the skull, is occupied only by a loose cellulosity, frequently impregnated by an oil, or sometimes, as in the sturgeon and thunny, by a more compact fatty matter. It has also been remarked, that this void between the cranium and the brain is much less in young subjects than in adults; from which it may be inferred that the brain does not increase in an equal proportion with the rest of the body. Cuvier, in fact, has found its dimensions nearly the same in different individuals—of the same species—of which the general size of one was double that of the other.

Although we should be sorry to lower the subjects of our present observation in the estimation of society, we think it undeniable that of all vertebrated animals fishes exhibit the smallest apparent symptoms of refined sensibility. Having no elastic air to act upon, they are necessarily mute, or nearly so, and all the sweet sensations which the delightful faculty of voice has called into being among the higher tribes, are to them unknown. Their glazed immoveable eyes, their fixed and bony faces, admit of no playful range in their physiognomical expression, of no variation connected with emotion. Their ears, surrounded on every side by the bones of the cranium, destitute of external conch, without any internal cochlea, and composed merely of certain sacks and membranous canals, scarcely suffice for the perception of the loudest sounds. Yet will they sink affrighted into the darksome depth of lakes, beneath the banks of rivers, or in ocean's blue profound, when "sky lowers and mutters thunder," and with elemental fierceness the sheeted lightning flashes broad and bright above their liquid dwellings.

SECTION VII.

Organs of Sight in Fishes.

Even the sense of sight may be supposed to find but feeble exercise in those profounder depths where so many of the inhabitants of ocean dwell, although the largeness of the visual organs, in many species, probably in some measure makes amends for this deficiency of light. But even in those species the eye cannot change its direction; still less can it alter its focus, so as to accommodate the vision to a varying distance, for the iris neither dilates nor contracts, and no teaching will induce the pupil to do otherwise than remain for ever the same in all degrees of light. No tear moistens the glazed surface, no eyelid clears or protects it,—but then we rejoice to think of the perpetuity of Tweed's crystalline flow, how constant and continuous are its gentle murmurs, how free from those dry specks which men call "dust," and how gently she laves the never-fevered temples of her (tee) total inhabitants. Yet the eyes of fishes, though often in themselves beautiful exceedingly, do still, from their want of variableness, exhibit but a dull and feeble representative of that expressive organ, so full of life and animation in the higher tribes.

The position, direction, and dimensions of the eyes of fishes, vary greatly. In some they have an upward aspect and are closely set together; in others they are lateral, and occasionally so wide apart as to be even directed slightly downwards. But of all anomalies presented by the position of the eyes of fishes, none is so extraordinary as that of the *Pleuronectes* (such as turbot, flounders, soles, &c.) in which the visual organs are placed, as it were, one above the other, and both upon the same side of the head. In certain species of eels and *Siluri*, they are so small as to be scarcely visible; while in other groups, such as *Priacanthus* and *Pomatomus*, they surpass in proportional diameter whatever is known of the same organs in the higher classes. It may indeed be said, in general, that the eye of fishes is large, and that its pupil especially, is broad and open, a character probably connected with the necessity of collecting whatever dubious rays of light may penetrate the obscure depth of waters. Fishes have no true eyelids. The skin always passes over the eye, to which it is slightly adherent; and is for the most part sufficiently transparent for the passage of the solar rays. In some species, such as eels, it passes over without the slightest fold or duplication; while in a few, for example, *Gastrobranchus cæcus* of Bloch, it continues so opaque as entirely to conceal the eye. In others, as the familiarly known herring and mackerel, it forms an adipose fold both before and behind; but these folds are fixed, and being unprovided with muscles, have no mobility. Sharks have an eyelid, somewhat more moveable, on the inferior margin of the orbit. The globe of the eye, although furnished as in man with six muscles, is scarcely moveable by voluntary action. One of the most singular kinds of eye, presented by the class of fishes is that of *Anableps*, which has two corneæ, separated by an opaque line, and two pupils pierced in the same iris, so that even a person not a member of the British Association might deem it double; but there is only one retina, and a single vitreous and crystalline humour. In accordance with the general structure of the eye of fishes, the nearly spherical form of the crystalline humour, the immobility of the pupil, and the difficulty with which it changes the length of its axis, we cannot but believe that the vision of this class is peculiar, if not comparatively imperfect. Images must be but feebly painted on the retina, and their visual perceptions must be indistinct and dull. Yet it is evident that they perceive their prey from a considerable distance; and the angler who knows either how rapidly they seize, or how cautiously they avoid his lure, and with what discrimination they sometimes prefer one colour or kind of artificial fly to another, must be impressed with the belief that the power of vision, at least in certain species, is by no means devoid of clearness and precision. They certainly see people very distinctly on a bank above them,—more so, we think, than from a corresponding distance when the object is more on their own level,—but they are endowed with no such discrimination of persons as that possessed by birds and beasts, and evidently don't know the difference between a boy and a bishop. We have seen the thing tried.

SECTION VIII.

Organs of Hearing in Fishes.

The organ of hearing in fishes consists of little more than the labyrinth, and that a much less complicated one than the corresponding part in either quadrupeds or birds. They have no external ear, unless we may bestow that name on a small cavity, sometimes slightly spiral, which we find in skates. It is, however, always covered by the skin, and is not perceptible among the osseous fishes. Those anatomists who find in the opercular bones the four bones of the ear of man, suddenly and prodigiously developed, hazard such a notion merely on the assumption that the bony pieces are the same in number in all crania; but it must be borne in mind that neither the form, relations, nor functions of these bones, nor their nerves and muscles, support such a comparison. The ear of fishes is in truth much less complete than in quadrupeds or birds, or even in the majority of reptiles. There is no doubt that they possess the power of hearing, though merely as a general sense of sound, and in all probability without the power of perceiving any variety or range of intonation. "The sense of hearing," says Mr Yarrell, "has by some been denied to fishes,—perhaps because they exhibit no external sign of ears: the internal structure, however, may be most successfully demonstrated in the various species of skate, in which the firmer parts of the head being formed of soft and yielding cartilage, the necessary divisions may be effected with great ease. The Chinese, who breed large quantities of the well-known gold-fish, call them with a whistle to receive their food. Sir Joseph Banks used to collect his fish by sounding a bell, and Carew the historian of Cornwall, brought his grey mullet together to be fed by making a noise with two sticks."* It appears to us, however, that the simple fact of fishes being as a class almost, if not entirely mute, is of itself a logical ground for believing that their perceptions of sound are extremely dull.

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* BRITISH FISHES, Introduction, p. xvi.

SECTION IX.

Organs of Smell in Fishes.

A FEW lines may now be devoted to a consideration of the sense of smell. The nostrils of fishes are not so placed as to be traversed either by air or water, in connection with the act of respiration. They consist merely of two openings, situate near the extremity of the muzzle, and lined by the pituitary membrane, which is raised in extremely regular folds. Their shape is in some oblong, in others round or oval. They are placed either at the end of the muzzle, or on its sides; sometimes on its superior face, and even occasionally, as in skates and sharks, on its under surface, near the angle of the mouth. In the lamprey, they are approximate on the upper part of the head,—opening by one common orifice. In the great majority of fishes, perhaps in all the osseous kinds, each nostril opens by two orifices, the one posterior to the other, and in some cases at a considerable distance. These are what are called double nostrils—an inaccurate term, in as far as each pair of holes leads only to a single cavity. The margins of the anterior orifice are often tubular, as in the eel; and sometimes a single side of the tubular margin is prolonged into a tentacular appendage, as in several *Siluri*. In the genus *Lophius*, the nostrils are borne upon a little pedicle, so as somewhat to resemble certain fungi. It does not appear that the envelope of the nostrils, at least in the osseous fishes, possesses mobility, or that the orifices are furnished with muscles, by means of which they can be opened and shut. It is certain, however, that fishes possess the faculty of perceiving odours; that various scents attract or repel them; and there is no reason to doubt that the seat of that perception lies in the nostrils. It may also be reasonably conjectured that its strength depends mainly on the degree of development produced by the number and extent of the interior folds. Mr Yarrell presumes the sense of smell to be acute, from the selection fishes make while searching for their food, and the advantage (not much that we know of) gained by anglers from the use of scented oils. "A pike," he observes, "has been seen to approach and afterwards turn away from a stale gudgeon, when at the distance of a foot from his nose, as if perfectly aware, at that distance, of the real condition of the intended prey." It is, at the same time, as clear as water, that if he did not smell the gudgeon, he at least saw it; and there may be just as much difference in a pike's eye between a fresh fish and one long kept, as in the eye of man between a young woman and an old one—neither act of discrimination in any way depending on the sense of smell. Mr Couch, an excellent and well-known ichthyological observer, is said to have perceived in a large fifteen-spined stickle-back, which he kept in a glass vessel, that the opening and closing of the nostrils were simultaneous with the action of the gill-covers, and he felt convinced from his observations, that the fluid was received and rejected for the purpose of sensation.

SECTION X.

Organs of Taste in Fishes.

In regard to the sense of taste, so essential to the happiness both of man and beast, it is obvious that as fishes, with few exceptions, swallow their food rapidly and with little mastication, their perception of that faculty must be by no means either acute or deliberate. The same inference may be drawn from the fact of their tongue being almost immoveable, often entirely osseous, not seldom beset with teeth or dental plates, and receiving very slender nerves, and these but few in number. Even those species, of which the jaws are so armed as to enable them to cut and bruise their aliments, cannot long retain the latter in their mouths, on account of the position and peculiar play of the respiratory organs. No salivary glands discharge their moisture on the organs of taste. The tongue itself is actually wanting in many species; and even when it exists in its most distinct and apparently fleshy state, it consists merely of a ligamentous or cellular substance, applied on front of the lingual bone, and is never furnished with muscles capable of producing any movement of extension or retraction, as in quadrupeds. We have, however, frequently seen fishes seize on stale worms and other unsavoury morsels, and almost instantaneously thereafter spout them from their mouths with violence to the distance of many inches,—thereby, we think, exhibiting some sharpness in the sense of taste, and no small bluntness in that of smell.

SECTION XI.

Organs of Touch in Fishes.

NEITHER can fishes be said to be highly favoured in respect to those organs on which the accurate perception of the sense of touch depends. The faculty is no doubt greatly deadened over the general surface, by the coating of scales, and in the more special members, by the inflexibility of the rays. It is chiefly confined to the lips, and even those parts in many species are themselves as hard and insensible as bone. Certain soft and delicate appendages, called *barbles*, possessed by many species, such as the cod and loach, are supposed to enjoy a more delicate perception of the sense of touch. The gurnards are provided with delicate detached rays at the root of the pectoral fins, which may be compared to fingers—probably serving a somewhat similar purpose, and making amends for their bony lips. Mr Yarrell regards it as a rule without exception, that all fishes furnished with barbles or cirri about the mouth, obtain their food near the ground; and there seems indeed to be a beautiful accordance between the functions of these *feelers*, as they have been called, and that deficiency of light which must ever prevail beneath a heaving mass of "waters dark and deep." The scales of fishes, which thus at once protect and deaden their feelings, are in the majority *imbricated*, that is, placed partially over each other, after the manner of slates or tiles. They are, however, neither equally distributed, nor of the same form or consistence over the general surface of the body. The head is frequently destitute of scales, and those which form what is called the lateral line of the body, are distinguished from the others by one or more small tubular perforations. All these scales are attached to the skin by their anterior edge, and it is also by means of the *dermis* that the peculiar matter, so remarkable for its silvery metallic lustre, and which bestows such brilliancy on many fishes, is secreted beneath the scales. It is this substance that is used in the formation of artificial pearls.

SECTION XII.

Things to be inferred from the preceding premises.

WE think it results from the foregoing slight details (into which we cannot here enter more minutely), that the external senses of fishes convey to them less lively and distinct impressions than do those of other vertebrated beings. By whatever scenes in nature they are surrounded, their perceptions, beyond a narrow range, are indistinct and dull. Their sexual emotions, cold as their blood, indicate only individual wants. They bear little or no attachment to each other, and even when assembled together in multitudinous millions (as subjects of the herring board,—T. D. L., *Sec.*), they exhibit only a congregated mass of selfish single fishes, each striving to push his own particular fortune along the wooded shores of deep Loch Fyne (or other rich marine pasture), without even crying "God bless the Duke," as all are now alike in duty and affection bound. Few species pair or enjoy any connubial gratification, and neither sex seems to recognise its offspring. Lest, however, we should be thought to malign the morals of the objects of our favourite sport, we shall notice a few exceptions to what we undoubtedly regard as the general rule, although we have devoted but little of our leisure to what a French clergyman, a friend of ours, was wont to call "the *loaves* of fishes."

Mr. Yarrell is of opinion that considerable attachment is frequently exhibited between the parents. Mr. Jesse records that he once caught a female pike during the spawning season, and that nothing could drive the male away from the spot at which she had disappeared. He (the pike, not Mr. Jesse) even followed her to the very edge of the water, "with long reluctant amorous delay." In other cases, this attachment is said not to be confined to the season of spawning; for a person who had kept two small fishes together in a glass vessel, having given one of them away, the other refused to eat, and showed obvious symptoms of an unhappy anxiety till his companion was restored. This, however, we would remark, was an experiment under constrained or artificial circumstances, and is therefore scarcely conclusive, although it shows that the germ of some affection may exist in fishes. Solitude, or almost total seclusion from one's kind, produces indeed a very dissimilar effect in different constitutions. It is asserted that a sentimental sailor actually fell in love with an old maid through his prison bars; while, on the other hand, it is known that keepers of light-houses almost always hate each other. However this may be, some few fishes exhibit an attachment to their young, and even watch over and defend their ova. Pennant informs us, that the river bull-head (*Cottus gobio*) deposits its spawn in a hole in the gravel, and quits it with reluctance; and Mr. Yarrell was told by an accurate observer, that the species in question "evinces a sort of parental affection for its ova, as a bird for its nest, returning quickly to the spot, and being unwilling to quit it when disturbed." He alludes also to the belief, that the male of the lump-sucker (*Cyclopterus lumpus*) keeps watch over the ova—guarding them from every ordinary foe with the utmost courage, and if driven from the spot by man, continually "looking back," (does he twist his neck?) and returning ere long to his loved deposit.*

But the prevailing attributes and domestic economy of fishes may be described as exactly the reverse of those of birds. These gay and airy creatures possess the power of surveying distinctly, at a glance, an immeasurable extent of horizon; their acute perception of sound appreciates all intonations, and their glad voices are exquisitely skilled in their production. Though their bills are hard, and their bodies closely covered by down and feathers, they are by no means deficient in the sense of touch. They enjoy all the delights of conjugal and parental affection, and perform their incumbent duties with devotedness and courage. They cherish and defend their offspring, and will sometimes even die in that defence; and of all the wonderful labours of instinctive art, none is so beautiful as the formation of their mossy dwellings. With what deep and continuous affection does the female brood over her cherished treasures!—how unwearied is the gallant male in his tender assiduities, and with what melodious love does he outpour that rich and varied song by which he seeks to soothe her sedentary task!

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* British Fishes, vol. i. Introduction, xxiv.

"Over his own sweet voice the stock-dove broods!"

But close at hand, on that umbrageous bough, sits the fond partner of his joys and sorrows, so that it is in no spirit of selfish solitary musing that he ever murmurs by woodland stream or shadow-haunted brook, "a music sweeter than their own." The slender winged and glossy plumaged swallow, which skims the verdure of the new-mown meadow, or dimples the surface of the breezeless lake,—the ponderous but giant pinioned eagle, winging his way from distant isles, o'er waters glittering with redundant life,—the proud far-sighted falcon, which launching from some hoar cliff, or lightening-scathed peak,

"Doth dally with the wind, and scorn the sun,"

—the wild and fearful lapwing, with graceful crest and dark dilated eye, are each and all enslaved for many a long enduring season by this love of offspring, and toil in its support from dewy morning until latest eve.

But it is far otherwise with our voiceless dwellers in the deep, who exhibit but few attachments, are conversant with no interchanging language, and cherish no warm affections. Constructing no dwelling, they merely shelter themselves from danger among the cavernous rocks of the ocean, in the silent depths of lakes, or beneath the murky shade of the overhanging banks of rivers; and the cravings of hunger seem alone to exercise a frequent or influential action over their monotonous movements. We must not, however, conceive that the life of fishes is not one of enjoyment, for we know that the Great Creator "careth for all his creatures;" and it ought perhaps rather to be said that we cannot appreciate the nature of their feelings, than that they are in any way fore-doomed to a negation of pleasure. Assuredly, however, the hand of nature has been most prodigal in bestowing on their external aspect every variety of adornment. Their special forms are infinite, their proportions often most elegant, their colours lively and diversified,—and nothing seems wanting, either in their shape or structure, to excite the unfeigned admiration of mankind. Indeed, it almost appears as if this prodigality of beauty was intended solely for such an end. The brightness of metallic splendour—the sparkling brilliancy of precious gems —the milder effulgence of the hues of flowers, all combine to signalize fishes as among the most beautiful objects of creation. When newly withdrawn from their native element, or still gliding submerged amid its liquid coolness, their colours fixed or iridescent, are seen mingling in spots, or bands, or broader flashes,—always elegant and symmetrical, sometimes richly contrasted, sometimes gradually softened into each other, and in all cases harmonising with a chaste fulness of effect, which Titian and Rubens might envy, but could never equal. For what reason, then, it has been asked, has all this adornment been so lavishly bestowed on creatures which can scarcely perceive each other amid the dim perpetual twilight of the deep? Shakspeare has already said, that there are "more things in *heaven* and *earth*, than are dream't of in our philosophy;" and we fear it is no answer to the foregoing question to add, that the same observation applies with even greater truth to the "*waters beneath the earth.*"

SECTION XIII.

The Circulating System of Fishes.

In common with warm-blooded animals, fishes are provided with a complete circulation for the body, and with another equally complete for the organs of respiration, and with a particular abdominal circulation, terminating at the liver by means of the *vena porta;* but their peculiar character, so far as regards the sanguiferous system, consists in this, that the branchial circulation alone is provided at its base with a muscular apparatus or heart, corresponding to the right auricle and ventricle of the higher classes, while nothing of the kind exists at the base of the circulating system of the body; in other words, the left auricle and ventricle are entirely wanting—the branchial veins changing into arteries without any muscular envelope. The muscular apparatus of their circulation is composed of the auricle, the ventricle, and the bulb of the pulmonary artery, and the auricle itself is preceded by a large sinus, in which all the veins of the body terminate,—a structure which gives rise to four cavities separated by restrictions, into which the blood must flow in its progress from the body to the gills or branchiæ.

SECTION XIV.

The Respiration of Fishes.

It is by an almost infinite subdivision of the vessels over the surface of these branchiæ, that the blood of fishes becomes subjected to the influence of an ambient fluid. This fluid is of course water, which is made to flow incessantly between the leaves of the branchiæ, by the movement of the jaws, and of the opercular and hyoidean apparatus. This mode of respiration is equally necessary to fishes as the direct respiration of air is to other animals; but the action of water on the blood is much more feeble than that of air. If the portion of air which is held in solution, or mingled with the water, be expelled by ebullition, fishes will not live, and many species are obliged to rise frequently to the surface, for the purpose of breathing atmospheric air. It is easy to *suffocate* a fish by keeping it for a length of time beneath the surface, enclosed in a gauze net. The gills of fishes, it has been observed, possess complex powers, and are capable of receiving the influence of oxygen, not only from that portion of atmospheric air which is mingled with the water, but also directly from the atmosphere itself. The absorption of oxygen, however, in either way, is very small in these aquatics; for it has been calculated that a human being consumes fifty thousand times more than is required by a tench. When fishes are deprived of water, they perish, not so much for want of oxygen, as because their branchiæ become dry, and their blood no longer circulates with freedom. Hence the species of which the branchial orifice is small, as the eel, or those which possess receptacles for moisture, like the so called climbing perch of M. Daldorf, (*Anabas scandens**), long survive exposure; while such as have their gills greatly cleft and so exposed, expire almost instantly when withdrawn from their moist abode,—a philosophical fact which has no doubt given rise to the familiar expression of "dead as a herring."

Although fishes as a class, are properly regarded as cold-blooded animals, yet Dr. John Davy has shewn that the temperature of certain species allied to the mackerel, which, being surface swimmers, have a good respiration, was higher than usually supposed. Thus the bonito was found to possess a temperature of 90 degrees Fahr., when the surrounding medium was 80° 5′, and may therefore be regarded as an exception to the supposed general rule. Physiologists have shewn that the quantity of respiration is inversely as the degree of muscular irritability. Mr. Yarrell regards it as a law, that those fishes which swim near the surface of the water, have a high standard of respiration, a low degree of muscular irritability, great necessity for oxygen, die almost immediately when removed from the water, and have flesh prone to rapid decomposition—mackerel, salmon, trout, and herring, being examples of this rule; while, on the contrary, such as live near the bottom of the water, have a low standard of respiration, a high degree of muscular irritability, less necessity for oxygen, a more enduring power of life in open air, and flesh which keeps fresh for several days. Of this second rule, carp, tench, eels, and the various kinds of skate and flat-fish, may be mentioned as examples.

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* A curious eastern fish called in the Tamoul language, *Paneiri*, or the tree climber, and alleged to ascend the trunks of trees by means of the spiny processes of the gill-covers. See *Linn. Trans.* iii. 62.

Whatever may be the physical temperature of fishes, there is nothing in their history more remarkable than their power of enduring the extremes of heat and cold. The breeding powers of that brilliant species of Chinese carp, commonly called the gold-fish, are greatly accelerated by water kept at a constant temperature of 80 Fahr.; yet Mr. Hoste, a naturalist of Vienna, has seen that species recover freely after being frozen up in ice. Fishes exist naturally in various baths and thermal springs, of which the temperature ranges from 113 to 120 degrees; and Humboldt and Bonpland, were witness in South America to fishes being thrown up alive, and apparently in good health, from the bottom of a volcano, along with water and heated vapour, which raised the thermometer to 210°, that is, to within two degrees of the boiling point. Contrast this with Dr. Richardson's account of the species of carp common in the fur countries of North America.

SECTION XV.

The Swimming Bladder of Fishes.

One of the most peculiar and characteristic organs of the finny tribe is the swimming bladder, commonly so called. This is a fine pellucid often silvery-coated viscus, of size and shape extremely variable in the different kinds, and in many species altogether wanting. In several genera, it has no opening or canal of communication, and the air which it contains must therefore be the result of secretion. It is composed of an extremely fine internal tunic, and of another of a thicker texture, and peculiar fibrous structure, remarkable for producing the finest kind of isinglass. It is enclosed within the general coating with which the peritoneum invests the other viscera. It is sometimes simple, as in perch, sometimes furnished with more or less numerous appendages, as in some of the haddock tribe, or branched, as in certain *Scienæ.* Occasionally we find it divided, as it were, into two parts by a restriction, as in the genus *Cyprinus*, several of the Salmonidæ, and others. It is chiefly among the abdominal fishes that we find it communicating by a tube or tunnel with the intestinal canal, and either directly with the gullet, as in *Cyprinus*, or with the base of the stomach, as in the herring. That of the sturgeon opens into the former portion by means of a conspicuous orifice. The contents of the swimming bladder are usually found to be azote, mingled with some fractional parts of oxygen or carbonic acid. There is probably a want of uniformity in its composition, which is of itself a proof that the air is secreted rather than drawn in from the atmosphere in the ordinary way. The gas in the carp was found by Fourcroy to be nearly pure nitrogen, while other chemists have found it composed of nitrogen, oxygen, and carbonic acid—the nitrogen in greater, the oxygen in smaller proportion, than in atmospheric air. Some physiologists seem to have regarded the swimming bladder as a true lung, which both admitted and retained the external air ; but as we have said, the connecting air-duct is in numerous species entirely wanting, while in many others which remain constantly at prodigious depths, the quantity of oxygen in the swimming bladder is greater than in those the abode of which is near the surface. Indeed, the oxygen is said to increase in quantity in proportion to the depth at which the species dwells. Carus considers it probable that the vessel in question performs a part analogous to that of the expiratory functions of the lungs in the higher classes, by not only separating excrementitious azote, and superabundant oxygen, from the blood, but even discharging those elements in such species as have this particular viscus provided with an air-duct.

The more obvious uses, however, of this organ, seem to be to maintain the fish in equilibrium, and to lighten or increase the relative weight, so as to cause a sinking or ascension in proportion as the bladder is compressed or expanded. This is probably effected by the contraction or dilatation of the ribs, at least we often see fishes rise or descend in the water without a visible effort of any kind. At all events, it is certain that when the air-bladder bursts, the fish remains at the bottom, usually turning up its belly, or exhibiting other irregularities in its attempts at locomotion. Another curious effect is observable in regard to fishes which have been suddenly brought from a great depth by means of a long fishing line, and which having no time either to compress or partially empty the organ in question, the air which it contains being no longer pressed by the heavy weight of water, either expands so as to burst the bladder, or by its dilatation forces the stomach and œsophagus into the fish's mouth. When it is pierced artificially, the fish almost immediately turns upon its back, and sinks to the bottom. Though of the highest importance in the economy of such species as possess it (and these are by far the greater number), yet this swimming bladder is not indispensable to the class of fishes, of which in truth about a fourth part are naturally destitute of it. In the *Pleuronectidæ* or flat-fish, it is entirely wanting, and these species generally remain at the bottom. The Lamprey is also in a similar predicament, and dwells in the mud. It is, however, difficult to determine for what reason this organ should have been denied to so many fishes, not only of the more indolent kinds, like the majority of those just referred to, which dwell composedly at the bottom of the water, but to many others which yield to none of their class in the ease and velocity of their movements. Its presence or absence does not even accord with the other conditions of organization; for while it is wanting in one kind of mackerel, it occurs in another, of which the habits are analogous, if not the same.

SECTION XVI.

The general position and relationships of Fishes, considered as a great class in the Animal Kingdom.

It results not less from the preceding general exposition of structure, than from all observation of special organization, that fishes form a class of creatures distinct from every other, and destined by the totality of their conformation, to live, move, and have their being in the waters. The liquid element forms their proper place in the creation: there they had their origin—there they must remain till the final consummation of all things; and it is either through slight and superficial approximations, or by vain metaphysical speculation, that any modern writer could regard them as proceeding from an exalted or more perfect development of the molluscous tribes. Equally unfounded is, of course, that other opinion, which in the spirit of the same philosophy looks upon fishes as forming an elementary stage, or fœtal condition of the other vertebrated classes. It is true that the mollusca, in common with fishes, respire by means of branchiæ; they equally possess a nervous and circulating system, an intestinal canal, and a liver; "and no one," says Cuvier, with a justifiable pride, "knows these things better than I, who first made known, with any degree of completeness, the anatomy and zoological relations of the molluscous tribes."* As animal life, continues that great observer, has received but a limited number of organs, it necessarily happens that some of these organs are common to several classes. But where, in other respects, is the resemblance? Even such organs as are common alike to mollusca and fishes, can be brought into no relation with those connections which the latter exhibit with the other vertebrated classes, nor is it possible to show the passage by which nature conducts us from one to the other. We cannot here state the conclusive reasoning of the great French naturalist regarding the distinction of the groups in question. We shall merely state his conclusion to be, that if there is a resemblance between the organs of fishes and those of the other great groups of the animal kingdom, it is only in so far as the functions of such organs are similar; that if we assert either that fishes are mollusca, of an ameliorated or higher grade, or that they represent a commencing or fœtal state of reptiles, we can do so only in an abstract or metaphysical acceptation, and that even with such restriction, we by no means convey an accurate notion of their organic structure; that we cannot regard them either as links of an imaginary chain of successive forms (of which none could serve as the germ of another, since none is capable of a solitary or isolated existence), or of that other chain, not less fanciful, of simultaneous and transitionary forms, which has no reality but in the fond imagination of certain naturalists, more poetical than observant. They pertain in truth, and solely, to the actual chain of co-existent beings—of beings necessary to each other, and which by their mutual action maintain the resplendent order and harmony of created things.

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* Hist. Nat. des Poissons, i. 544.

SECTION XVII.

The Geographical distribution of Fishes.

We shall now conclude our general exposition of the subject, by a brief allusion to one of its branches, of the highest interest to the philosophical enquirer. Our knowledge of the laws which regulate the distribution of fishes is meagre in the extreme; in other words, the facts concerning their characteristic localities are few, and have never been generalised.

From the immeasurable extent and continuous nature of the fluid which they inhabit, they are supplied by nature with greater facilities of dispersion than most other animals; and the greater equality of the temperature of water, compared with that of earth or air, admits in several instances of the same species inhabiting a vast extent of country. Those races, especially, which travelling together in shoals, which "bank the mid-sea," and speedily consume the natural food which each particular spot affords them, are obliged, like the pastoral tribes of old, or the woodland hunters of America, to remove from place to place in search of additional supplies; and so the species acquires a more widely extended distribution. It is thus that the cod and herring are spread over a vast extent of the northern ocean, and in undiminished numbers, notwithstanding the war of extermination which man and other voracious animals appear to wage against them.

But if the natural means by which the species inhabiting the continuous waters of the ocean have spread themselves from clime to clime, be to a certain extent within the range of our comprehension, it is otherwise with those peculiar to rivers, and the waters of secluded lakes. How these have contrived to migrate from one region to another, and to people with identical species the depths of far removed and solitary waters, separated from each other by chains of lofty mountains, or wide extended wastes of desert sand, is a problem, which in the present state of our knowledge we seek in vain to solve. How came the *vendace* of Lochmaben into certain Lochs in Dumfries-shire, and into no others in England, Scotland, Wales, or the emerald Isle? Why, or from whence did *Salmo ferox* descend into numerous Lochs in Scotland, and continue absent from many others, equally adapted (as it seems) to their reception, preservation, and increase? It may indeed happen that spawn or ova are carried by water-fowl from one great central reservoir to another, and thus the rivers of a half a continent may be put in possession of species unknown before; — but this supposition scarcely suffices to account for the general diffusion of certain species, and still less for the narrow restriction of others, equally subjected to the chances of that aërial flight.

We now proceed to a detailed, though not greatly extended sketch of the various species of fishes which fall within the range of angling art,—including their natural habits, their external aspect, and their mode of capture. We regard our subject as one of deep and sustaining interest in a philosophical point of view, and of the highest and most immediate importance when considered in relation to the economical advantages derivable by the human race. We shall endeavour to combine with our immediate object, such miscellaneous information as we can collect from genuine sources, with a view to render this little essay more palatable to the general reader; and if any great deficiency in that department is observable, we hope it may in some measure be attributed to the very nature of this branch of natural history, the subjects of which, inhabiting another element from ourselves, have thus their on-goings too often veiled from mortal sight by a "world of waters"—which no eye can pierce, but the eye of HIM who called the light out of darkness, and who created the "heavens and the earth, the sea, and all that in them is."*

How much nobler and more soul sustaining are these combined pursuits of the angler and naturalist, than such as many worldly-minded men do follow after, who either fretting with fevered care o'er hoarded heaps, know not that "Better is little with the fear of the Lord, than great treasure, and trouble therewith,"—or wasting themselves and substance in riot and intemperance, forget how far sweeter is "a dinner of herbs where love is, than a stalled ox and hatred with the same."

> Let them that list these pleasures then pursue,
> And on their foolish fancies feed their fill;
> So I the fields and meadows green may view,
> And by the rivers fresh may walke at wille,
> Among the dazies and the violets blue,
> Red hyacinth and yellow daffodil,

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* In our brief exposition of the structure and physiology of fishes, we have mainly followed the masterly introduction prefixed by Baron Cuvier to his (and M. Valenciennes) great work,—the *Histoire Naturelle des Poissons*, now amounting to 14 vols. We have also availed ourselves occasionally of Mr Yarrell's accurate and elegant work on *British Fishes*, and have moreover sought to refresh ourselves by turning in time of need to our own article, "Ichthyology," in *Encyclopædia Britannica*, vol. xii. p. 151,—to say nothing of the Essay on "Angling" in that work, which, as already mentioned on our fly leaf, forms the basis or but-end of the present publication.

Purple narcissus like the morning rayes,
Pale ganderglas, and azore culverkayes.

I count it better pleasure to behold
The goodly compasse of the loftie skie;
And in the midst thereof, like burning gold,
The flaming chariot of the world's great eye;
The wat'ry clouds that in the ayre uprol'd
With sundry kinds of painted colours flie;
And faire Aurora lifting up her head,
All blushing rise from old Tithonus' bed.

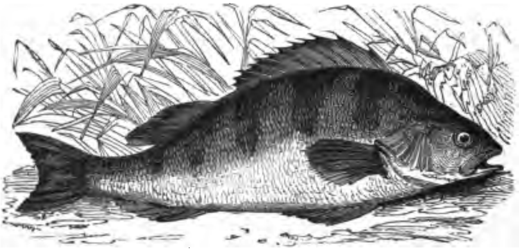
The hills and mountains raised from the plains,
The plains extended levell with the ground,
The ground divided into sundry vains,
The vains enclos'd with running rivers round,
The rivers making way thro' nature's chains,
With headlong course into the sea profound;
The surging sea beneath the vallies low,
The vallies sweet, and lakes that gently flow.

Oh! bright Winander, how thy far-stretching beauty lies before me, thy head o'er-canopied by loftiest mountains (gaze in that magic mirror, behold the vaulted sky, the breathless woods, the grey gigantic battlements of heaven), thine islands floating in deep cærulean calm like things entranced, thy beaming splendour, as lessening from sight mid sweet umbrageous shores, thou seek'st thine ocean of eternity! Why in this murky night of dark December dost thou revisit thus my soul's recesses? Why in the chambers of mine imagery art thou with all thy pomp of summer glory brought up uncalled before me? The lustre now grows dim, and fades away, but not on this green earth, on grassy bank or high uplifted mountain, can such effulgent gleams as those surround me. For why? Old man, the *summer of thy youth* made that portentous blaze. Father of light and life,

"Not without hope we suffer and we mourn."

CHAPTER III.

OF THE ANGLER'S FISHES IN PARTICULAR—THEIR ASPECT, HABITS, AND MODES OF CAPTURE.



THE PERCH.*

THIS gregarious fish is angled for with a worm or minnow. It is a bold biter during the warm months of the year, though very abstemious in the winter season. When a shoal is met with, great sport is frequently obtained. A small cork float is used, and the bait is hung at various depths, according to circumstances, a knowledge of which can only be obtained by practice. In angling near the bottom, the bait should be frequently raised nearly to the surface, and then allowed gently to sink again. When the weather is cool and cloudy, with a ruffling breeze from the south, perch will bite during the whole day. The best hours towards the end of spring are from seven to eleven in the morning, and from two to six in the afternoon. In warm and bright summer weather, excellent times are from sunrise till six or seven in the morning, and from six in the evening till sunset.

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* *Perca fluviatilis*, Linn.

The Perch is one of the most beautiful of the fresh water fishes of Europe, but is too familiarly known to need description. It inhabits both lakes and rivers, but shuns salt water. Pallas, however, is said to have stated in his *Zoographia Russo-Asiatica* (a work still unpublished), that about spawning time both Pike and Perch are found in a gulf of the Caspian Sea, about thirty verstes from the mouth of the Terek. The female deposits her eggs, united together by a viscid matter, in lengthened strings,—a peculiarity noticed by Aristotle. Spawning takes place in April and May, and the number of eggs sometimes amounts to near a million. The Perch occurs all over Europe, and in most of the northern districts of Asia. It is easily tamed, and if kept moist will live for a long time out of water. It sometimes attains to a great size, but the majority are smallish fishes. Pennant alludes to one said to have been taken in the Serpentine River, Hyde Park, which weighed nine pounds. But even one half of that weight would be any where regarded as extraordinary, and a Perch of a pound is looked upon as a fine fish. The flesh of this species as an article of food is wholesome, though neither rich nor high flavoured. The months of April, May, and June, are those during which it is least esteemed.

The Basse, or Sea Perch (*Perca labrax*, Linn. *Labrax lupus*, Cuv. and Val.), is a fish of a chaste and pleasing aspect, though destitute of the strongly contrasted colouring of the preceding, from which it is also distinguished by an abundance of small teeth upon the tongue. It is abundant in the Mediterranean, and occurs occasionally along the British Shores. We have seen it in the Edinburgh Market. It is a very voracious fish, remarkable for the size of its stomach, and was known to the ancients by the appropriate name of *lupus*. It takes a bait freely (onisci, broken shell-fish, etc.) when angled for during flood-tide, with strong tackle, from projecting rock or pier. The ordinary size ranges from 12 to 18 inches, although Willoughby has stated that it sometimes attains the weight of 15 pounds. Its flesh is excellent.

THE RUFFE OR POPE.*

This fresh water fish bears a considerable resemblance to the Perch, both in form and habits. It is much esteemed for the delicacy of its flesh, but is unfortunately unknown in Scotland. Mr Yarrell informs us that it is common to almost all the canals and rivers of England, particularly the Thames, the

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* *Perca cernua*, Linn.—*Acerina vulgaris*, Cuv. and Val.

Isis, and the Cam. Though said to be unknown in Spain, Italy, and Greece, it is rather extensively distributed over the colder portions of Europe, preferring slow shaded streams with a gravelly bottom. It is angled for with a small red worm, and being gregarious, six or eight dozen may sometimes be taken at a single stand. It is a good article for the table, although its dimensions, seldom exceeding six or seven inches, render requisite a large supply. It deposits its ova during the month of April, around the roots of flags and rushes.

THE RIVER BULL-HEAD, OR MILLER'S THUMB. *

This is a small dark-coloured fish, four or five inches in length, familiarly known in Britain, and frequent in most of the streams of Europe and the North of Asia. It usually lies concealed beneath stones, from whence it darts with great rapidity upon its prey, and the angler lures it to destruction by a small red worm, or portion of the same. Those who are regardless of moisture, or destitute of shoes and stockings, catch it with their hands. This fish is said to be extremely prolific, and the female, when with spawn, becomes so greatly distended, that her ovaries protrude like mammæ. The flesh, like that of the Salmon, has a reddish hue when boiled, and affords a good and wholesome food, much sought after by the mountain tribes of many countries; yet Pallas assures us that in Russia no one will taste it, although the common people hang it around their

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* *Cottus gobio*, Linn., Cuv.

necks as an amulet, under the impression that it acts as a preservative against the attacks of tertian fever.

Does the reader know why this fish is called the Miller's Thumb, or for what reason a miller is supposed to have a thumb different from that of other men? The following is Mr Yarrell's explanation of these two mysteries. The head of the creature in question (we mean of the fish), is smooth, broad, and rounded, and exactly resembles the form of a human miller's thumb, as that form is superinduced by a peculiar and constant action of the muscles in the exercise of a particular and most important part of his vocation, *i. e.* the ascertaining, by actual contact, the character and qualities of the meal. In this habitual act the thumb is the guage of the value of the produce, and hence has arisen the phrase of "worth a miller's thumb," as well as that other adage, "an honest miller has a golden thumb,"—in reference to the amount of profit likely to reward his conscientious labour. By the frequency of this mechanical process, a characteristic form is produced, which, if it does not altogether resemble the head of the fish in question, has at least led to the latter being likened to the former, and named accordingly.

This is the only fresh water species of the genus, but several kinds of *Cottus* occur along our sea shores, and afford occasional amusement to the young angler. Their forms and general aspect are very extraordinary, and, we doubt not, have been of frequent use in rivetting the early attention of the student of nature. We shall briefly notice these marine species.

The Short-spined Cottus, Sea Scorpion, or Father-Lasher (*C. scorpius*, Bloch), is common around our coasts, and occurs in the Firth of Forth as high up as Kincardine. It feeds on shrimps or other crustacea, and small fishes, and is frequently found in rocky pools left shallow by the recession of the tide. Its usual length is from half a foot to nine inches, a few being found a foot long. It is eaten by people who know (and can obtain) no better, but is by no means a delicate morsel.

The Long-spined Cottus, or *Lucky Proach* of Scotland, also frequently named the Father-Lasher (*Cottus bubalis* of Cuv. and Val.), is common along the British shores, where it seldom attains to a greater length than eight or ten inches. It exhibits rather a formidable aspect when handled, owing to its peculiar habit of projecting its spiny processes, and inflating the sides of the head so as greatly to distend the gill covers. The apertures to the gills are very large, and yet these fishes live for a length of time out of water,—the general rule being supposed to be, that the power of withstanding removal from moisture depends on the smallness of such apertures. Mr. Yarrell, however, has brought forward several cases which militate against this rule; for example the Carp, Tench, Barbel, Perch, and the generality of flat fishes, have large gill apertures, although they notoriously live long out of water, while, on the other hand, the common loach, and several other well known species, die quickly when removed from their native element, although their gills are scarcely at all exposed, the apertures being very small. M.

Fleurens, a French physiologist, has assigned another reason than desiccation for the death of a fish out of water. "If its motions be attentively watched, it will be seen, that although the mouth be opened and shut continually, and the gill-cover raised alternately, the arches supporting the branchiæ, or gills, are not separated, nor are the branchial filaments expanded,—all remain in a state of collapse; the intervention of a fluid is absolutely necessary to effect their separation and extension, without it these delicate fibres adhere together in a mass, and cannot in that state receive the vivifying influence of oxygen; the situation of the fish is similar to that of an air-breathing animal enclosed in a vacuum, and death by suffocation is the consequence. To this may be added, that the duration of life in each species, when out of water, is in an inverse ratio to the necessity of oxygen." *

The Lucky Proach, though disesteemed in Britain as an article of consumption, forms a favourite diet in Greenland, where it often constitutes the principal food of the natives, the soup made from it being both pleasant and nutritious.

We come now to the genus *Gasterosteus,* of which the species familiarly known under the name of Stickle-backs (Scotice, *Benticles*), are small fishes, very frequent in all the fresh waters of Europe. Gesner, indeed, alleged that they did not occur in Switzerland, but the contrary has long been ascertained. Our most common species is *G. aculeatus*, Penn. (*G.*

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* British Fishes, i. 67.

leiurus, Cuv. Yar.) distinguished from several of its congeners by the lateral plates not extending beyond the second dorsal spine, the remainder of the side being smooth and soft. There are six or seven British species (some of them barely distinguishable from each other), all of which occur in Scotland. They are angled for by young people with a small red worm, and when taken uninjured, are easily tamed. Their usual colours are green above, and of a silvery hue below, but towards the breeding season the males especially assume upon the under parts a brilliant scarlet. They are very voracious for their size, and commit great damage in fish ponds by devouring the unconscious spawn, or the defenceless fry. *G. pungitius*, commonly called the smaller or ten-spined stickle-back, is the least of all our fresh water fishes. In common, however, with a more truly marine species (*G. spinachia*, Linn.), it is also found in the sea. The salt water kind just alluded to is a larger and more elongated species, measuring above half a foot in length, and commonly called the fifteen-spined stickle-back. It is sometimes named the Sea-adder, probably from its lengthened snake-like aspect, and is not uncommon on the Scottish shores. We have taken it while dredging in that long sea basin called the Cromarty Firth. Mr. Couch transferred a specimen to a vessel of water, along with an eel of three inches in length, and it speedily attacked and swallowed its companion head foremost, but, owing to its great comparative bulk, only partially, the tail remaining suspended from the mouth, so that it was at last obliged to disgorge its prey, though half digested. "The effect of the passions on the colour of the skin in the species of the genus *Gasterosteus* is remarkable, and the specimen now spoken of, under the influence of terror, from a dark olive with golden sides, changed to pale for eighteen hours, when it as suddenly regained its former tints."* We know not whether, when the latter change occurred, the fish was placed in a vessel of a different colour, but the former alteration may probably be accounted for on a principle well known to naturalists, in accordance with which an almost instantaneous change takes place in the colour of a fish when it either moves spontaneously between two beds of differently coloured ground or gravel, or is transferred from its native haunts to any earthen vessel. Dr Stark has well shown that these changes are effected in connection not only with the colour of the inside coating of the vessel, but with the intensity of light to which they may be otherwise exposed. Whatever the physical cause of this may be, the final effect is alike admirable and obvious, in securing them from too inquisitorial observation in shallow rivers, or on sandy shores.

THE MACKEREL. †

In conformity with a preceding intimation, we shall devote an occasional paragraph to such of the sea fishes, in their order, as afford the angler any recreation. Of these is that valuable table species just named. It may be captured, time and place suiting, with a strong rod, and coarse tenacious line, baited with almost anything to which it is possible to give a life-like motion,—a sea gull's feather, a strip of leather, a piece of fish, of flesh, or,—as we once had occasion to try,—an inch or two of scarlet ribbon. A favourite and successful bait is that called a *lask*, which consists merely of a long slice cut from one mackerel and swallowed by another, upon the principle, probably, that " it is not lost which a friend gets." This lure is cut thickest towards the hook, and tapers backwards, that it may vibrate vivaciously when drawn through the water. The angler must be in a sailing boat, and the boat under the influence of a fresh breeze. " The line," says Mr Couch, is short, but is weighed down by a heavy plummet; and in this manner, when these fish abound, two men will take from 500 to 1000 in a day. It is singular that the greatest number of mackerel are caught when the boat moves most rapidly, and that even then the hook is commonly gorged. It seems that the mackerel takes its food by striking across the course of what it supposes to be its flying prey. A gloomy atmosphere materially aids this kind of fishing for mackerel."

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* Couch's MS. as quoted by Mr Yarrell, BRITISH FISHES, i. 89. We may add, on the authority of Dr Johnston of Berwick, that this is one of the few fishes which makes a nest.

† *Scomber scombrus*, Cuv. and Val.

This species is one of the most beautifully coloured of our fishes, but is too well known to need description. It is widely spread throughout the seas of Europe, and occurs at different periods along different portions of our British shores. On the Cornish coast it sometimes appears as early as the month of March, but the fishermen of Lowestoffe and Yarmouth do not reap their chief harvest till May and

June; and during these months, besides being abundant, they are best conditioned. As an article of food they are in great request, although certain constitutions find them heavy or even unwholesome. We need scarcely say that they must be eaten very fresh,—few fishes tainting sooner than mackerel. It was in consequence of their being so unfit for keeping, that the practice was first allowed in London, so far back as 1698, of their being cried along the streets for sale on Sundays,—an unandrewagnew-like custom, which, we are sorry to say, is still continued. The success of this fishing exceeded all precedent in 1821,—during which season the *take* of sixteen boats in a single day (30th June) amounted to £5,252. The Messrs. Pagets have stated the calculation to be, that in the season of 1823, about 1,420,000 mackerel were taken in the vicinity of Yarmouth. So abundant were they at Dover, as to be sold at the rate of threescore for a shilling. The usual weight of a well-sized fish is about two pounds. They are sometimes heavier, but the largest individuals are not the best for the table. Though a well-known species along our Scottish coast, the mackerel is by no means so abundant with us in Scotland as in England. It usually makes its appearance at the mouth of the Firth of Forth in June, confining itself for a few weeks to the vicinity of the Bass rock, and extending in the course of July to Prestonpans, and across to Largo, Buckhaven, and Wemyss. A few stragglers are occasionally found as high up the Firth as Queensferry.* We have already alluded to the singular fact of the common mackerel having no swimming bladder, although that organ is found in several closely allied species. What necessity of nature, asks Baron Cuvier, can require it in the one and not in the other? What can have produced it? These are great problems (of no easy solution), both in the study of final causes, and the general philosophy of nature.

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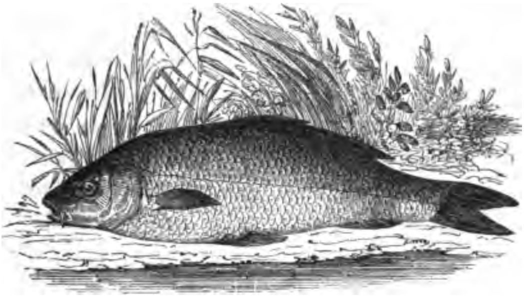
* Dr Parnell, "On the Fishes of the Firth of Forth."—WERNERIAN MEMOIRS, vol. vii.

The preceding species terminate the British angler's list of the *acanthopterygian* fishes, distinguished as an *Order* by the first portion of the dorsal, or the first dorsal, if there are two fins of that kind, being always supported by spinous rays, and where some similar spines are also found in the anal fin, and at least one in each of the ventrals. But in the following species, all the rays are soft, with the occasional exception of the first of the dorsal, or of the pectorals. They form the *malacopterygian order* of naturalists, of which our first species is



THE COMMON CARP.[*]

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[*] *Cyprinus carpio*, Linn.

This fish, like the preceding, is asserted to have been introduced into England by Leonard Mascal, a gentleman of Sussex, early in the 16th century; and in good company, if there is truth in the old distich,

Turkies, carps, hops, pickerell, and beer,
Came into England all in one year.

The carp is, however, mentioned as a *dayntous fysshe* though scarce, by Juliana Barnes, in the year 1496. It attains to a prodigious size in the waters of the south of Europe, and in the Lake of Como is said sometimes to weigh 200 pounds. The largest of which we have any precise account is that mentioned by Bloch. It was taken near Frankfort-on-the-Oder, and weighed seventy pounds, with a length of nearly nine feet. In certain lakes of Germany individuals are occasionally taken of the weight of thirty or forty pounds; and Pallas relates that they occur in the Wolga five feet long. The fecundity of these fishes is very great, and their numbers consequently would soon become excessive, but for the many enemies by which their spawn is attacked. No fewer than 700,000 eggs have been found in the ovaria of a single carp, and that by no means of large size. Their growth is also very rapid. This fish breeds more freely in ponds than in rivers, although those of the latter are more esteemed. Angling for carp requires, according to Walton, "a very large measure of patience." The haunts of this fish in the winter months are the broadest and least disturbed part of rivers, where the bottom is soft and muddy; but in summer it usually lies in deep holes, near some *scour*, under roots of trees, and beneath hollow banks, or in the neighbourhood of beds of aquatic weeds. In ponds they thrive best in a rich marl or clayey soil, where they have the benefit of shade from an overhanging grove of trees.

Small carp bite eagerly, but the larger and more experienced fish are deceived with difficulty. The rod should be of good length, the line strong, furnished with a quill float and ending in a few lengths of the best silk-worm gut. The hook is proportioned to the size of the bait, and a single shot is fixed about twelve inches above it. "Three rods," says Daniel, "may be employed; one with the bait at mid-water, another a foot or less from the bottom, and the third to lie upon it when the line and lead are not discovered, as in the two former; the places intended to be fished in should, the night before, be ground-baited with grains, blood, and broken worms, incorporated together with clay, the hook baits should be red worms taken out of tan, flag or marsh worms, green peas so boiled as to soften, but not to break the skin, and throwing some in now and then. When this bait is used,—which should be with one on the hook to swim a foot from the ground,—in case of a bite, strike immediately; a large carp, upon taking the bait, directly steers for the opposite side of the river or pond."* During hot weather, when these fish are about to spawn, and whilst lying among the weeds near the surface, they may be angled for with a fine line, without either sink or float. The hook may be baited with a red worm, a pair of gentles, a caterpillar, or a cad bait, and thrown lightly as in fly-fishing, and then drawn towards the angler. If it can be made to fall first upon the leaf of some water plant, and then dropped upon the surface, the chance of success will be increased. The best months are May, June, and July, and the most advisable times of the day are from sunrise to eight in the morning, and from sunset during the continuance of twilight, and onwards through the night. It is the opinion of many, though we cannot trace the origin of the idea, no doubt an erroneous one, that the 10th of April is a fatal day for carp.

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* *Rural Sports*, vol. ii. p. 257.

The beautiful and almost domesticated species called *par excellence* the gold fish, is likewise a species of Cyprinus,—*C. auratus* of Naturalists. It is the most brilliantly adorned of all our fresh water fishes, and is indeed scarcely surpassed even by the more richly ornamented inhabitants of the ocean. It was originally a native of China, although now domesticated, so to speak, in almost every country, both of the old and new world. Like the carp it has the dorsal and anal fins denticulated. When young it is of a blackish hue, and gradually acquires the splendid golden red colour by which it is usually characterised. The *silver fish* commonly so called, is the same species, with a difference merely in the metallic tinting. Indeed, like most other creatures long estranged by captivity from their natural habits, and subjected to artificial influences, the golden carp exhibits innumerable varieties both in form and colour. M. Sauvigny has represented eighty-nine of these,—manifesting all shades of silvery white and purple, orange, red, and gold.* These variations extend even to some important parts of structure. Individuals occur without a dorsal fin, others with an unusually large one, some with the caudal fin greatly increased in size, and divided into three or four lobes. In certain cases the eyes are enormously dilated.

This magnificent fish is said to have been originally confined to a lake near the mountain Tsien-king in the province of The-kiang, in China, about N. Lat. 30°. They were first brought to Europe in the seventeenth century (different years are assigned by different authors), and continued very rare in England till 1728, when a fresh accession was received. The first seen in France were sent for Madame Pompadour. The French have naturalised them in the Mauritius, where they are now extremely common, both in artificial ponds and natural streams, and are frequently served up as food. Portugal abounds with them more than any other European country. With us they do not flourish well either in rivers or open ponds, not so much because such places are uncongenial to their nature, as on account of their defenceless condition, and the numerous enemies to which they are exposed. An increase of warmth, however, is very influential in relation to their productive powers, and they are known to breed very freely in the engine-dams of manufacturing districts, where the water has an average temperature of about 80 degrees. They are found, under these circumstances, in a kind of water-cut, connected with the Clyde near Glasgow, and may thus eventually become naturalised in that river. "The extreme elegance of the form of the golden carp, the splendour of their scaly covering, the ease and agility of their movements, and the facility with which they are kept alive in very small vessels, place them amongst the most pleasing and desirable of our pets."* According to Mr. Jesse, they even maintain an affection for each other. In confinement they may be fed with fine crumbs of bread, small worms, flies, yolks of eggs dried and reduced to powder, and various other articles. We usually feed our own with manna croup. Many people, however, even humane-minded philanthropists, and M. S. P. C. A.'s,† never give them any food at all. We ourselves once heard a clergyman say, that they did not require to be fed, because nature had endowed them with the power "of decomposing oxygen." If the stomach is satisfied by this theory, the gills will assuredly make no objection to it.

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* *Histoire Naturelle des Dorades de la Chine*, Paris, 1780.

As this brilliant creature is not an angler's fish we scarcely know why we have been led to name it here. Perhaps, because at this moment it ever and anon is flashing its golden gleams upon us from a glassy globe upon that marble slab between our windows. Let us enliven our own dull prose by now inserting the great Laker's rhymes:—

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* *Magazine of Natural History*, vol. iii. p. 478.

† Members of societies for preventing cruelty to animals.

Type of a sunny human breast
Is your transparent cell,
Where fear is but a transient guest,
No sullen humours dwell;
Where sensitive of every ray
That smites this tiny sea,
Your scaly panoplies repay
The loan with usury.

How beautiful! Yet none knows why
This ever graceful change,
Renewed—renewed incessantly—
Within your quiet range.
Is it that ye, with conscious skill,
For mutual pleasure glide;
And sometimes not without your will,
Are dwarfed and magnified?

The happy prisoners here immortalized, having been removed to a pool in the pleasure-ground of Rydal Mount,—

Removed in kindness from their glassy cell
To the fresh waters of a living well,

the poet proceeds to cast upon them, from his magic mirror, "the light that never was on sea or land,"—

There swims, of blazing sun and beating shower,
Fearless (but how obscured!) the golden power,
That from his bauble prison used to cast
Gleams by the richest jewel unsurpast;
And near him, darkling like a sullen gnome,
The silver tenant of the crystal dome;
Dissevered both from all the mysteries
Of hue and altering shape that charmed all eyes.
They pined, perhaps they languished, while they shone
And, if not so, what matters beauty gone,
And admiration lost, by change of place,
That brings to the inward creature no disgrace?

But if the change restore his birthright, then,
Whate'er the difference, boundless is the gain.
Who can divine what impulses from God
Reach the caged lark, within a town abode,
From his poor inch or two of daisied sod?
Oh, yield him back his privilege! No sea
Swells like the bosom of a man set free—
A wilderness is rich with liberty.
Roll on, ye spouting whales, who die or keep
Your independence in the fathomless deep!
Spread, tiny Nautilus, the living sail;
Dive, at thy choice, or brave the freshening gale!
If unreproved the ambitious eagle mount
Sunward to seek the daylight in its fount,
Bays, gulfs, and ocean's Indian width, shall be,
Till the world perishes, a field for thee!

While musing here I sit in shadow cool,
And watch these mute companions in the pool,
Among reflected boughs of leafy trees,
By glimpses caught—disporting at their ease—
Enlivened, braced, by hardy luxuries,
I ask what warrant fixed them (like a spell
Of witchcraft, fixed them) in the crystal cell;
To wheel, with languid motion, round and round
Beautiful, yet in mournful durance bound.
Their peace, perhaps, our lightest footfall marred,
On their quick sense our sweetest music jarred;
And whither could they dart, if seized with fear?
No sheltering stone, no tangled root was near.
When fire or taper ceased to cheer the room,
They wore away the night in starless gloom;
And when the sun first dawned upon the streams,
How faint their portion of his vital beams!
Thus, and unable to complain, they fared,
While not one joy of ours by them was shared.*

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* *Yarrow Revisited, and other Poems*, p. 148.

THE BARBEL.*

This fish is frequent in the warm and temperate parts of Europe, and abounds in the Rhine and Elbe. It is unknown in Scotland, but occurs in the Thames, and the river Lea in Essex. The former river, in the neighbourhood of London, from Putney upwards, produces quantities of large barbel, but, according to Mr Yarrell, they are held in little estimation except for sport. They frequent the weedy portions of the river during summer, but seek the deeper water when the weeds decay; they then also shelter themselves near piles, locks, and bridges, till the ensuing spring. They are so numerous near Shepperton and Watten that one hundred and fifty pounds weight has been taken in the course of five hours, and on one occasion two hundred and eighty pounds weight of large sized barbel was captured in a single day. The largest British specimen recorded weighed fifteen and a half pounds. Mr Jesse has frequently caught barbel while spinning for large Thames trout with bleak or minnow. The barbel feeds on slugs, worms, and fishes, and its spawning season occurs in May and June. The ova, amounting to seven or eight thousand, are deposited on the gravel, and covered over by the parents.†

In a culinary point of view this is one of the worst of the fresh-water fishes. It is gregarious, and roots among the soft banks with its nose, like a sow.

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* *Barbus vulgaris*, Flem. and Cuv. *Cyprinus barbus*, Linn.

† *British Fishes*, vol. i. p. 322.

During this process small fish are seen to attend upon it, probably with a view to seize on whatever minute aquatic creatures may be dislodged from earth or stones.

The angling season commences in May, and continues till September. The most approved hours are from daylight till ten in the morning, and from four in the afternoon till about sunset. The line should be strong and rather heavily leaded, so that the bait may float about half an inch from the ground. Considerable caution is required in playing this fish, as he is apt to run off when struck, with great violence, towards some stronghold, and in so doing sometimes breaks both rod and line. He is rather nice in his baits, which must be kept clean and sweet, and untainted by musty moss. "One caution," says Mr Daniel, "in angling for barbel, will bear repetition: never throw in the bait farther than enabled by a gentle cast of the rod, letting the plumb fall into the water with the least possible noise. It is an error to think that large fish are in the middle of the river; experience teaches the fallacy of this opinion; they naturally seek their food near the banks, and agitating the waters by an injudicious management of the plumb will certainly drive them away."

THE GUDGEON.

This small but highly esteemed fish is angled for with a little red worm, near the ground. It bites so freely that many dozens may be taken in a few hours, and affords pleasant occupation to young an-

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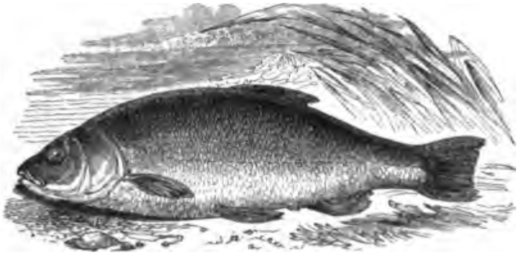
* *Gobio fluviatilis*, Cuv. *Cyprinus gobio*, Linn.

glers, and even to those of more advanced years who value sweetness of taste as much as largeness of dimension. It delights in the *scours* or rippling shallows of otherwise slow running streams. Its habits are gregarious, and the operation of spawning takes place in spring, and occupies a considerable period, being as it were postponed and renewed from time to time. The fry measures about an inch long by the beginning of August, and the fish itself seldom exceeds eight inches. The gudgeon, like many other good things, seems confined to the southern quarter of the island, at least we know of none in Scotland.



THE TENCH.*

This species is a lover of still waters, and his haunts in rivers are among weeds, or pools well screened by bushes. Tench are found spawning from June till September, and they are in the best condition from the latter month till the end of May. The tackle should be strong, with a swan or goose-quill float for ponds, and a piece of cork for rivers. The hook (in size from No. 4 to 6,) should be whipt to sound silk-worm gut, with two or three shot fixed to it at the distance of a foot. The bait should float about a couple of feet from the surface, and should be drawn occasionally gently upwards, and allowed slowly to sink again. Small marsh worms, middle-sized lobes, or the red species found in rotten tan, are to be recommended. "He will bite," says Walton, "at a paste made of brown bread and honey, or at a mash-worm, or a lob-worm; he inclines very much to any paste with which tan is mixed, and he will bite also at a smaller worm with his head nipped off, and a sod worm put on the hook before that worm; and I doubt not but that he will also in the three hot months, for in the nine colder he stirs not much, bite at a flag-worm, or at a green gentle: but can positively say no more of the tench, he being a fish that I have not often angled for; but I wish my honest scholar may, and be ever fortunate when he fishes."

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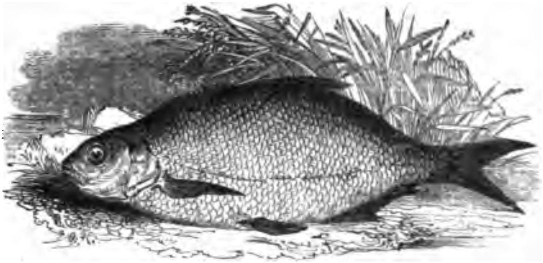
* *Tinca vulgaris*, Cuv. Flem. *Cyprinus tinca*, Bloch.

The general colour of this species is a deep yellowish brown, frequently assuming a fine golden hue. Its usual length is from twelve to fourteen inches, but instances are known of its reaching three feet. In winter it conceals itself in mud, and seems during that season to fall into a kind of torpidity. Its ova are very minute, of a green colour, and so numerous that nearly 300,000 have been found in a single female of not more than four pounds in weight. The tench is very extensively distributed, occurring over a great portion of the globe. In Scotland, however, it is only an imported species. Its flesh is not much esteemed, being soft, insipid, and by no means easy of digestion. It is extremely tenacious of life.



THE BREAM, OR CARP BREAM.*

This fish breeds both in deep slow-running rivers and in ponds;—it prefers the latter. The most enticing bait is a well conditioned earth-worm, although, the angler also uses paste made of bread and honey, wasp grubs, grasshoppers, &c. Boiled wheat serves well for ground-baiting the spot on the preceding night, and some fasten a number of worms to a piece of turf, and sink it to the bottom. When the ground has been thus prepared, and the tackle put in order, the angler should commence his labours by three or four in the morning. Let him approach the place with caution, so as not to be perceived by the fish, and cast his hook, neatly baited with a live and moving worm, in such a manner that the lead may lie about the centre of the prepared ground. The bream is a strong fish, and runs smartly when first struck; but after a few turns he falls over on his side, and allows the angler to land him without much trouble. He is by no means so lively as the carp. The best hours for bream are from four till eight in the morning, and from four in the afternoon till eight in the evening. In the river Trent, near Newark, there are two kinds of bream. The common species is that called the carp bream, from its yellow colour, and it sometimes attains the weight of eight pounds. The other species or variety, regarded by Mr. Revett Shepherd as a nondescript, never exceeds a pound in weight. It is of a silvery hue, and is known by the name of white bream.* The bream, though rare in Scotland, occurs in Loch Maben. The lakes of Cumberland occasionally produce it of a great size, and, in those of Ireland, it has been known to attain a weight of from twelve to fourteen pounds. "A place," says Mr. Yarrell, "conveniently situated for the fishing, is baited with grains or other coarse food for ten days or a fortnight regularly, after which great sport is usually obtained. The party frequently catch several hundred weight, which are distributed among the poor of the vicinity, who split and dry them with great care, to eat with their potatoes. The bream, as food, is best in season in spring and autumn."† It yields, however, but an indifferent diet, and is often cultivated in ponds for the indirect advantage it affords as food for pike.

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* *Abramis brama*, Cuv.

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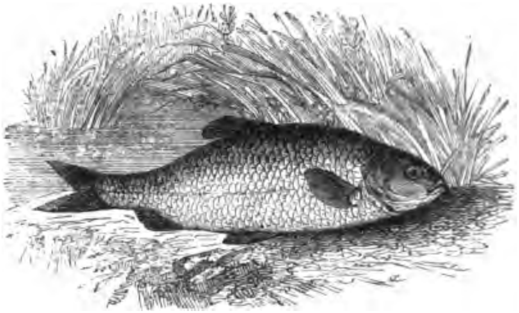
* *Linn. Trans.* vol. xiv. p. 587. This is now recognised as a distinct species, under the title of white bream, or bream flat,—*Abramis blicca* of Cuvier, figured by Mr. Yarrell in his first volume, p. 340. "Its mode of biting," adds the last named author, "when angled for, is singular; it appears more prone to rise than to descend, and the float, consequently, instead of being drawn under water, is laid horizontally on the surface by the attack of the fish on the bait."

† *British Fishes*, vol. i. p. 337.



THE ROACH.[*]

The carp has been named the "water-fox," on account of his subtlety, and the roach the "water-sheep," by reason of his silliness. This fish makes good soup, though very bony, and otherwise not much esteemed. The season for roach fishing in the Thames, where the species attains to a larger size than elsewhere, commences about the end of August. "Next, let me tell you," says Walton, "you shall fish for this roach in winter with paste or gentles in April with worms or caddis, in the very hot months with little white snails, or with flies under water; for he seldom takes them at the top, though the dace will. In many of the hot months roaches may be also caught thus:—Take a May-fly or ant-fly; sink him with a little lead to the bottom near the piles or posts of a bridge, or near to any posts of a wear—I mean any deep place where roaches lie quietly—and then pull your fly up very leisurely, and usually a roach will follow your bait to the very top of the water, and gaze on it there, and run at it, and take it, lest the fly should fly away from him."* Vast shoals of this species ascend the streams in the parish of Killearn, from Loch Lomond, and are caught by nets in thousands. Their emigration from the loch, however, continues only for the space of three or four days towards the end of May.†

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[*] *Leuciscus rutilus*, Cuv. *Cyprinus rutilus*, Linn.

It has been remarked by anglers, that while these fish continue in the streams, and for a week after their departure, scarcely can a trout be taken either with minnow, worm, or fly, in consequence of that species being gorged with the roaches' spawn. Donovan supposes that roach come up in large shoals from the sea to deposit their ova, while Montagu expresses his belief that they cannot exist in sea-water at all. Dr. Parnell remarks, that although the sea is certainly not the natural abode of the roach, yet it is sometimes found there, being carried down from lakes or rivers after high floods. "In the Solway Firth, I saw in the month of June, five examples taken in the salmon-nets; and I was informed by the fisherman there, that in the early part of the season they frequently captured them after a flood."‡ Montagu founds his opinion upon the following fact. A certain small river runs into a large piece of water close to the sea, on the south coast of Devon, and there is no outlet for the fresh water, except by percolation through the shingle that forms the barrier between it and the salt. There the roach throve and multiplied beyond precedent. Some years ago, however, the sea broke over the boundary, and continued for some time to flow copiously into the lake at every tide,—by which "untoward event" all the fresh water fishes were destroyed. But we conceive that this fact is by no means of a conclusive nature, in as far as there may be an essential difference, in relation to the effect upon a fish's constitution, between a forced and sudden, and a voluntary and graduated contact with saline waters. In the latter case there is a physiological expectation or preparation for the change, and we doubt if even salmon, so remarkable for their long and vivacious continuance in both conditions of the liquid element, would suddenly "suffer a sea change" with entire impunity, or enjoy the "*vice versâ*" if instantaneously transported from ocean's blue profound, and plunged over head and *ears* into a "cauldron lynn."

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* *Complete Angler*, p. 218.

† *Statistical Account of Scotland*, vol. xvi. p. 100.

‡ *Fishes of the Firth of Forth*, p. 108.

The roach is a gregarious species, and usually swims in large shoals. It spawns in May and June, at which period the scales feel rough to the touch. It is not held in high esteem as food, but is in best condition in October. The usual colour of the upper parts is dusky green with blue reflections, softened off upon the sides, and passing into silvery white upon the under portions. The dorsal and caudal fins are reddish brown, the pectorals of a more orange hue, the ventrals and anals red. The dimensions vary greatly, as in other fishes. A roach of two pounds was deemed by Walton worthy of record. The largest known to Mr. Jesse weighed three pounds. Mr. Pennant alludes to one which weighed five pounds. But the great majority do not much exceed a few ounces. This fish, though common in England, is found in few of the Scotch lakes and rivers. It follows, however, the lines of our canals, and may now be caught in considerable quantities (by those who have permission so to do) at the eastern terminus of the Union Canal, in the western suburb of Edinburgh.

THE DACE.*

This species bears some resemblance to the preceding both in its aspect and habits, but it is less generally distributed over England, and does not, so far as we are informed, occur naturally in Scotland at all. It is common on the continent of Europe. It is gregarious, swims in shoals, and spawns in June. It seldom exceeds nine or ten inches in length, and as an article of consumption, is preferable to the roach. "Its food is worms and other soft substances; but like the trout, it will occasionally rise at an artificial fly, and it is frequently taken by fly-fishers while whipping for that fish."† Above Richmond, as soon as the weeds begin to rot, a grasshopper used as an artificial fly is found very successful in hot weather among the shallows. This mode can only be practised in a boat, with a heavy stone to serve as an anchor, fastened to a few yards of rope. The boat drifts gently down the stream, and the stone is dropped whenever the angler considers himself in the neighbourhood of a likely place. Standing in the stern, he first throws directly down the stream, and then to the right and left; and after trying for about a quarter of an hour in one spot, he again weighs anchor, and proceeds to another station. The English trollers also use the dace as bait for pike, on account of its silvery lustre; but where a living lure is required, as for lines set by night, a roach is preferable, on account of its greater tenacity of life.* Few, however, advocate live bait fishing now-a-days, either by precept or example.

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* *Leuciscus vulgaris*, Cuv.—*Cyprinus leuciscus*, Linn.

† *British Fishes*, vol. i. p. 353.

THE GRAINING.†

This fish is quite unknown in Scotland, and seems singularly restricted even in the sister kingdom. According to Mr. Yarrell, it is only to be met with in certain streams in the township of Burtonwood and Sanky, which flow into the Mersey below Warrington, and in others, in or near the township of Knowsley, which also form the Alt, in Lancashire. Its upper parts are of a pale drab colour, tinged with bluish red, and separated from the lighter coloured lower portions by a well-defined boundary line. All the fins are of a pale yellowish white. It resembles the trout in its food and habits, frequents both the still and rapid parts of rivers, but has not yet been seen in ponds. It is angled for with artificial flies, at which, according to Mr Bainbridge, it rises freely, and affords excellent sport. When "on the rise," a pannier may be filled in no great length of time. The graining is better eating than the dace, but it is also a smallish fish, seldom exceeding half-a-pound in weight. It is believed to exist in Switzerland.

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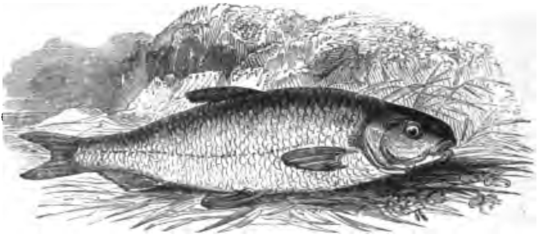
* *British Fishes*, vol. i. p. 354.

† *Leuciscus Lancastriensis*, Yarrell.—*Cyprinus Lancastriensis*, Shaw.



THE CHUB, OR SKELLY.*

This fish occurs in England, Wales, and the south of Scotland. It is sometimes called *skelly* in Cumberland (although the species usually so designated in that country is in truth the guyniad), by reason, it is said, of the great size of the scales. It is a shy and timid species, frequenting deep water in the quiet parts of streams, or screening itself from sight by keeping beneath some overhanging bush or tree. It feeds on worms and insects,—especially cock-chafers, which, according to Mr. Jesse, are irresistible. So far as angling is concerned, it is usually caught by that peculiar mode of art called *dibbing*. The lure, whether moth or beetle, is allowed to hang perpendicularly from the point of the rod, and just touching the water. By tapping the butt-end with the knuckles, a trembling or gentle struggling is produced, in imitation of what would be the natural movements of the insect, had it fallen unincumbered by hook or line upon the water. The chub will be made to rise by this deception, if he is inclined to rise at all. He often, however, prefers to continue sitting where he is. This species spawns in spring, and is regarded as rather coarse, the best mode of dressing being that of broiling with the scales on. It seldom attains to any considerable size, though a specimen is recorded which weighed five pounds.

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* *Leuciscus cephalus*, Flem. Yar.—*Cyprinus cephalus*, Linn.

The chub is rather a dull fish upon the hook, and is speedily tired. Great caution is required on the angler's part, as it is naturally fearful, and sinks on the least alarm, towards the bottom of the stream. The baits used, besides those already mentioned, are maggots, grasshoppers, salmon-roe, &c. Black and dun flies gaudily dressed, and ribbed with gold or silver twist, are well adapted for deceit in streams, and the red-spinner is not to be despised. The landing net is particularly necessary in angling for chub, as the best spots are generally encumbered by trees or bushes, which prevent or interfere with the fish being either drawn to hand or pulled ashore.

THE RED-EYE OR RUDD.*

This is a common continental fish, well known in the Thames, and not uncommon in several of the southern counties of England, but becoming rarer as we proceed northward. We have never met with it in Scotland, although it is recorded as occurring here. It is found in Lough Neagh in Ireland, under the misapplied name of roach. "The rudd," says Mr. Yarrell, "in addition to its vivid colours, is also tenacious of life,—and is on that account preferred by trollers as a bait for pike. It breeds freely without requiring any care to be bestowed upon it,—and is therefore useful as food for large perch, trout, or pike. It is said to be a much better fish to eat than the roach, but does not attain more than two pounds' weight. The food of the rudd is worms, molluscous animals and insects, with some vegetable matter; it spawns in April, or early in May, on or about aquatic plants,—and the scales at this period are rough to the hand."*

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* *Leuciscus erythrothalmus* Cuv.—*Cyprinus erythrothalmus*, Linn.

The iris in this species is of an orange red colour, —from whence both its English and Latinised specific name. The cheeks and gill covers are golden yellow; the upper parts brown tinged with green and blue; the sides pale; the abdomen of a light golden yellow; and the entire surface of the body is pervaded by a brilliant reddish golden hue, of which the tint varies with the fall of light. The fins are of a cinnabar red colour, those of the back and tail being more inclined towards reddish brown. It is no doubt of this fish that Isaak Walton affirms "there is a kind of bastard small roach, that breeds in ponds, with a very forked tail, and of a very small size, which some say is bred by the bream and right roach; and some ponds are stored with these beyond belief; and knowing men that know the difference call them rudds; they differ from the true roach as much as a herring from a pilchard." We believe that both the rudd and white bream have been by some regarded as hybrids, but we agree with Mr. Yarrell in thinking that the instances in which animals in a state of unconstrained nature seek society (sexually) beyond their own species, are extremely rare. Hybrids and permanent varieties are the result of restriction and domestication, and notwithstanding the opinion to which Sir Humphrey Davy and other wise and learned observers have lean't, "I confess my doubts of the existence of hybrid fishes."

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* *British Fishes*, vol. i. p. 362.

THE AZURINE, OR BLUE ROACH. *

This is another Lancashire species discovered and described by Mr. Yarrell. † It was transmitted to that observant naturalist by Lord Derby, and occurs in certain limited localities within the township of Knowsley. It is hardy, tenacious of life, and spawns in May. The flesh is firm and good, somewhat resembling that of the perch. Its natural food, and the baits used in its capture, are the same as those of the carp. The largest specimens yet met with have not exceeded a pound in weight. The colour of the upper parts is slate blue, passing beneath into a silvery white,—the whole surface tinged with a

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* *Leuciscus cœruleus*, Yarr.

† *Linn. Trans.* vol. xvii. p. 8, and *British Fishes*, vol. i. p. 365.

metallic lustre. The irides have a tinge of straw colour,—the fins are white. Although Mr Yarrell, in regard to this species, is certainly entitled to the credit of a first describer, yet M. Agassiz in a recent visit to this country, recognised the azurine as a well known inhabitant of some of the Swiss lakes.

THE BLEAK. *

This small and active fish may be angled for with what is called a *pater noster* line, which consists of half a dozen of fine hooks fastened about 6 or 8 inches from each other. These may be baited with gentles, or more variously, to increase the temptation, with a gentle, a small red worm, a fly, &c. and thus several fish may be hooked at the same time. In angling for bleak the tackle must be very fine. In fresh streams they rise well at the black gnat, or any other small sad-coloured fly.

The bleak is a gregarious fish of six or seven inches in length, which inhabits most of the streams in England, frequented by roach and dace. It is chiefly prized by the juvenile angler, being of an open candid nature, and easy of access by means of almost any small fly. Mr. Jesse informs us, that it is the most amusing and playful of all the species confined in the vivarium of Bushy Park. " Their activity could not be exceeded, and it gave me much pleasure to see them, on a still summer's evening, dart at every little fly that settled on the water near them,—appearing always restless, and yet always happy."

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* *Leuciscus alburnus*, Cuv.

Mr. Yarrell states that the bleak is frequently found to have its intestines occupied by tape-worms, and that the name of mad bleak, is bestowed upon such as are seen occasionally swimming in an agitated and unnatural manner on the surface of the water. These peculiar movements are supposed to result from the pain produced by their internal tormentors.

The body of this species is of an elongated and narrow form, the forehead straight, and the lower jaw somewhat extended. The colour above is pale greenish or ashy-brown, tinged with blue, the sides and abdomen silvery white. The bleak is common in Europe, and is one of the species whose *nacre*, or silvery matter, is used in the fabrication of artificial pearls.

THE MINNOW.*

Although the sportsman of maturer years may despise " this small familiar fry," we cannot altogether pass over, in our brief record of angler's fishes, a species which so delights the universal childhood, and which, even in after life, so usefully subserves as bait for larger prey. It is the fish by means of which almost all our youthful anglers commence their experience of the gentle art. " He is a sharp biter," says our Father Walton, " at a small worm, and in hot weather makes excellent sport for young anglers, or boys, or women that love that recreation; and in the spring they make of them excellent minnow-tansies; for being washed well in salt, and their heads and tails cut off, and their guts taken out, and not washed after, they prove excellent for that use; that is, being fried with yolks of eggs, the flower of cowslips and of primroses, and a little tansie. Thus used, they make a dainty dish of meat."

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* *Leuciscus phoxinus*, Cuv. *Cyprinus phoxinus*, Linn.

The external aspect of this beautiful little creature is no doubt familiar to all our innumerable readers. It is the smallest species of the genus found in Europe, the greatest length to which it attains seldom exceeding three inches. It makes its appearance in our streams in March, and disappears in October, passing the intermediate months below the sheltering banks, or buried beneath the gravel. It is a very gregarious species, and small shoals are to be found in almost every shallow river, especially in fine clear weather,—the species seeming to delight in warmth and sunshine. The minnow usually spawns in the month of June, but its ova are often formed at an after period. It is very prolific, and during the spawning season the head becomes covered by small pale coloured tubercles,—the parents themselves, especially the males, being at the same time brilliantly adorned by ruddy green and gold. The flesh of the minnow is delicate and well flavoured, but its size is too small to admit of its being of much value as an article of food. It is principally used as a bait for the capture of the larger kinds.

THE LOACH OR BEARDIE.*

We here name this familiar species also rather from love to the associations of early life, than from any respect we bear to its own character. The loach is entirely a ground fish, living in clear and gravelly streams. It forms an excellent bait for eels, and is also a nutritious food for man, though of a slimy surface, and somewhat forbidding aspect. It feeds on small worms, and various aquatic insects, and is very prolific,—spawning in early spring. Its flesh is highly regarded by many, and some continental people hold it in such esteem, as to cause its transportation from one river to another, at considerable expense and trouble. Frederick the First of Sweden, caused loaches to be carried from Germany, with a view to their being naturalized in his own more northern kingdom.*

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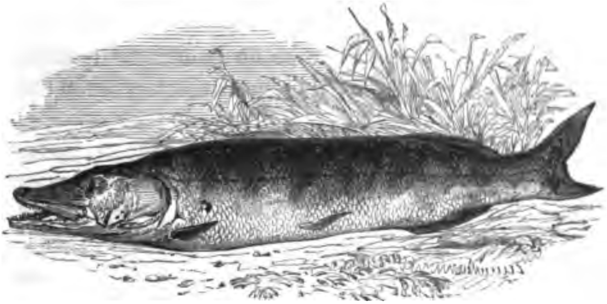
* *Cobitis barbatula*, Linn.



THE PIKE.†

This "fell tyrant of the liquid plain" is not regarded as indigenous to the waters of Britain, but is said to have been introduced in the time of Henry

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* FAUNA SUECICA.

† *Esox lucius*, Linn.

VIII. That it was well known in England at an earlier period is however evident, both from the book of St. Alban's, printed by Wynken de Worde in 1496, and from the account of the great feast given by George Nevil, Archbishop of York, in the year 1466. There is in truth no evidence either of its non-existence in this country at a remote period, or of its importation during comparatively recent times.*

The voracity of this fish is almost unexampled, even in a class remarkable for their omnivorous propensities. Goslings, young ducks, and coots, water-rats, kittens, and the young of its own species, besides every kind of fresh water fish, have been found in the stomach of the pike. It is said to contend with the otter for its prey, and has been known to pull a mule into the water by the nose, and a washerwoman by the foot.

There seems, indeed, to be no bounds to its gluttony, as it devours almost indiscriminately whatever edible substance it meets with, and swallows every animal it can subdue. "It is," says Lacepede, "the shark of the fresh waters, and reigns there a devastating tyrant, as does its prototype in the midst of the ocean; insatiable in its appetites, it ravages with fearful rapidity the streams, the lakes, the fish ponds, wherever it inhabits. Blindly ferocious, it does not spare its species, and devours even its own young; gluttonous without choice, it tears and swallows with a sort of fury the remains even of putrid carcases. This blood-thirsty creature is also one of those to which nature has accorded the longest duration of years; for ages it terrifies, agitates, pursues, murders, and devours the feebler inhabitants of the waters; and as if, in spite of its insatiable cruelty it was meant it should receive every advantage, it has not only been gifted with great strength, gigantic size, and formidable weapons, but has also been adorned with elegance of form, symmetry of proportions, and richness and variety of colour."* We cannot altogether agree with this eloquent and ingenious French writer, in his admiration of the general aspect of the pike. Like almost all fishes, it bears about it some beautiful tinting when fresh, but we think its long lank jaws, and sunken eyes, give it rather a malign or diabolical expression, such as we would by no means approve of in any near relation of our own.

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* "That pike," says Mr. Yarrell, "were rare formerly may be inferred from the fact, that in the latter part of the thirteenth century, Edward the First, who condescended to regulate the prices of the different sorts of fish then brought to market, that his subjects might not be left to the mercy of the venders, fixed the value of pike higher than that of fresh salmon, and more than ten times greater than that of the best turbot or cod. In proof of the estimation in which pike were held in the reign of Edward the Third, I may again refer to the time of Chaucer, already quoted at page 336. Pikes are mentioned in an Act of the sixth year of the reign of Richard the Second, 1382, which relates to the forstalling of fish." "Pike were so rare in the reign of Henry the Eighth, that a large one sold for double the price of a house-lamb in February, and a picherel, or small pike, for more than a fat capon."—BRITISH FISHES, vol. i. p. 384.

A singular instance of its voracity is related by Johnson, who asserts that he saw one killed which contained in its interior another pike of large size, and the latter, on being opened, was found to have swallowed a water rat! We ourself once killed a small pike about seven pounds in weight, and in his interior was found a promising young pike above a pound weight (probably his own eldest son), which he had swallowed, we can scarcely think inadvertently, as the tail continued sticking out of his mouth like a quid of tobacco. The beauty of the thing was, that the heir-apparent had previously swallowed a perch, and this would have been all well enough in its way, had not the perch had a hook in its mouth, and another curving from its tail, the result of which unforeseen fact was an additional piece of gluttony on our own part,—both parent and child being stewed in milk that same evening, and eaten by ourself, and a few quiet members of the Society of Friends, to whose companionship (as they to ours) we have been always much attached. Indeed, we have named an artificial fly in honour of Dr. Martin Barry.

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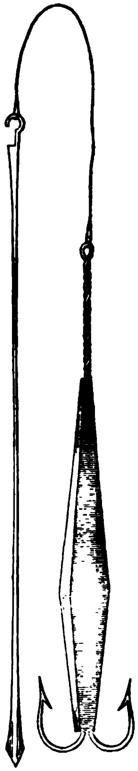
* Quoted in Griffith's *Animal Kingdom*, vol. x. p. 461.

Mr. Jesse has recorded that eight pike, weighing five pounds a-piece, consumed nearly eight hundred gudgeon in three weeks. Dr. Plot relates that a pike seized the head of a swan as she was feeding in Lord Gower's Canal at Trentham, with her neck beneath the water, and gorged so much of it that both creatures were killed,—for the servants, on perceiving something peculiar in the aspect or attitude of the swan, took boat, and found not only the prey but the pike dead—he having caught an unconscious Tartar. Women have had their feet seized by these fish while washing clothes, and the present head keeper of Richmond Park was on one occasion washing his hands over the side of a boat in the great pond, when a pike made a dart at them, and he had but just time to withdraw into upper air,—a proof that people engaged in aquatic excursions should never wash their hands over the gunwale, but rather keep them in their breeches pockets. There is a gentleman now residing at Weymouth in Surrey, who enjoys the privilege of showing the marks of a pike's teeth upon his arm. These were inflicted, however, not by aggression on the part of the dumb creature, but in self-defence, for the gentleman in question, while walking one day by the side of the River Wey, had endeavoured to seize a pike, which (as the event occurred before any suspicion of chartism in the country) we hold he was hardly entitled to do,—but the reader may form his own opinion from the fact which Mr. Jesse gives, as follows, though in different words. The unarmed gentleman, walking as aforesaid, saw a large pike in a small creek. He immediately pulled off his coat, but not his ——, tucked up his shirt-sleeves, and stept into the water to intercept its return to the river, and hoping if he could get his hands beneath it, to throw it on the bank. During this attempt, the pike finding escape doubtful, and entreaty vain, seized the gentleman by the arm, and lacerated it pretty considerably. We think the fish was right. The most serviceable kind of person for hiring to frighten pike with his feet, is a stout Greenwich pensioner with two wooden legs. We shall now consider the other and more usual modes of capturing this great tyrant of the fresh waters.

The pike is in season from May to February, and is most frequently angled for by trolling with a strong-topped rod. The hooks are generally fastened to a bit of brass wire for a few inches from the shaft, to prevent the line from being snapped. Different methods are used in angling for pike. *Trolling*, in the more limited sense of the word, signifies catching fish with the gorge-hook, which is composed of two, or what is called a double eel-hook; *live bait-fishing* is practised with the aid of a floated line; and *snap-fishing* consists in the use of large hooks, so baited as to enable the angler to strike the fish the moment he feels it bite, immediately after which he drags it *nolens volens* ashore.

Trolling for pike may be practised during the winter months, when trout fishing has ceased; and the colder season of the year is in fact more convenient for the sport, owing to the decay or diminution of the weeds which usually surround their favourite haunts. With the exception of chub and dace, which bite pretty freely at the bottom all winter, scarcely any other fish can be relied upon for sport during the more inclement portion of the year. To bait a gorge-hook, take a baiting-needle, and hook the curved end to the loop of the gimp, to which the hook is tied. Then introduce the point of the needle into a dead bait's mouth, and bring it out at the middle of the fork of the tail, by which means the piece of lead which covers the shank of the hook, and part of the connecting wire, will lie concealed in the interior of the bait: the shank will be in the inside of its mouth, and the barbs on the outside, turning upwards. To keep the bait steady on the hook, fasten the tail part just above the fork to the gimp, with a silk or cotton thread; or a neater method is, to pass the needle and thread through the side of the bait, about half an inch above the tail, so as to encircle the gimp in the interior. The baits used vary in weight from one to four ounces, and the hooks must be proportioned to the size of the fish with which they are baited. The barbs of the hook ought not to project much beyond the sides of the mouth, because, as the pike generally seizes his prey crosswise, and turns it before it is pouched or swallowed, if he feels the points of the hook he may cast it out entirely.



In trolling for pike, it is advised to keep as far from the water as possible, and to commence casting close by the near shore, with the wind blowing from behind. When the water is clear and the weather bright, some prefer to fish against the wind. "After trying closely," says Mr. Salter, "make your next throw further in the water, and draw and sink the baited hook, drawing it straight upwards near to the surface of the water, and also to right and left, searching carefully every foot of water; and draw your bait with the stream, because you must know that jack and pike lay in wait for food with their heads and eyes pointing up the stream, to catch what may be coming down; therefore experienced trollers fish a river or stream down, or obliquely across; but the inconsiderate as frequently troll against the stream, which is improper, because they then draw their baited hook behind either jack or pike when they are stationary, instead of bringing it before his eyes and mouth to tempt him. *Note.*—Be particularly careful, in drawing up or taking the baited hook out of the water, not to do it too hastily, because you will find by experience that the jack and pike strike or seize your bait more frequently when you are drawing it upwards than when it is sinking. And also further observe, that when drawing your bait upwards, if you occasionally shake the rod, it will cause the bait to spin and twist about, which is very likely to attract either jack or pike."*

These fish are partial to the bends of rivers and the bays of lakes, where the water is shallow, and abounding in weeds, reeds, water-lilies, &c. In fishing with the gorge-hook, when the angler feels a run, he ought not to strike for several minutes after the fish has become stationary, lest he pull the bait away before it is fairly pouched. If a pike makes a very short run, then remains stationary for about a minute, and again makes one or two short runs, he is probably merely retiring to some quiet haunt before he swallows the bait; but if, after remaining still for three or four minutes, he begins to shake the line and move about, the inference is that he has pouched the bait, and feels some annoyance from the hook within, then such part of the line as has been slackened may be wound up, and the fish struck. It is an unsafe practice to lay down the rod during the interval between a run and the supposed pouching of the bait, because it not unfrequently happens that a heavy fish, when he first feels the hooks in his interior, will make a sudden and most violent rush up the river or along the lake, and the line is either instantly broken, or is carried, together with both the rod and reel, for ever beyond the angler's reach. "When the pike cometh," says Colonel Venables, "you may see the water move, at least you may feel him; then slack your line and give him length enough to run away to his hould, whither he will go directly, and there pouch it, ever beginning (as you may observe) with the head, swallowing that first. Thus let him lye untill you see the line move in the water, and then you may certainly conclude he hath pouched your bait, and rangeth about for more; then with your trowl wind up your line till you think you have it almost streight, then with a smart jerk hook him, and make your pleasure to your content." *

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* *The Troller's Guide,* by T. F. Salter, Lond. 1820. In the work above quoted will be found a full account of the necessary implements, and the most approved practice, in this department of the art.

The fresher and cleaner the bait is kept, whether for trolling, live-bait, or snap-fishing, the greater is the chance of success.

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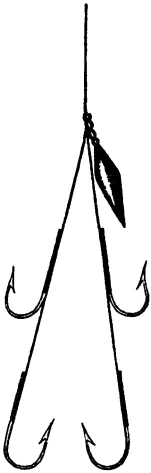
* *The Experienced Angler*, p. 36. Third edit. Lond. 1668.

As pike, notwithstanding their usual voracity, are sometimes, as the anglers phrase it, more on the play than the feed, they will occasionally seize the bait across the body, and, instead of swallowing it, blow it from them repeatedly and then take no further notice of it. The skilful and wily angler must instantly convert his gorge into a snap, and strike him in the lips or jaws when he next attempts such dangerous amusement. The dead snap may be made either with two or four hooks. Take about twelve inches of stout gimp, make a loop at one end, at the other tie a hook (size No. 2), and about an inch farther up the gimp tie another hook of the same dimensions; then pass the loop of the gimp into the gill of a dead bait-fish, and out at its mouth, and draw the gimp till the hook at the bottom comes just behind the back fin of the bait, and the point and barb are made to pierce slightly through its skin, which keeps the whole steady: now pass the ring of a drop-bead lead over the loop of the gimp, fix the lead inside the bait's mouth, and sew the mouth up. This will suffice for the snap with a couple of hooks. If the four-hooked snap is desired (and it is very killing), take a piece of stout gimp about four inches long, and making a loop at one



end, tie a couple of hooks of the same size, and in the same manner as those before described. After the first two and the lead are in their places, and previous to the sewing up of the mouth, pass the loop of the shorter gimp through the opposite gill, and out at the mouth of the bait; then draw up the hooks till they occupy a position corresponding to those of the other side: next pass the loop of the longer piece of gimp through that of the shorter, and pull all straight: finally, tie the two pieces of gimp together close to the fish's mouth, and sew the latter up.

Some anglers prefer fishing for pike with a floated line and a live bait. When a single hook is used for this purpose, it is baited in one or other of the two following ways: Either pass the point and barb of the hook through the lips of the bait, towards the side of the mouth, or through beneath the base of the anterior portion of the dorsal fin. When a double hook is used, take a baiting-needle, hook its curved end into the loop of the gimp, and pass its point beneath the skin of the bait from behind the gills upwards in a sloping direction, bringing it out behind the extremity of the dorsal fin; then draw the gimp till the bend of the hooks are brought to the place where the needle entered, and attach the loop to the trolling line. Unless a kind of snap fishing is intended, the hooks for the above purpose should be of such a size as that neither the points nor the barbs project beyond either the shoulder or the belly of the bait.

Snap-fishing is certainly a less scientific method of angling for pike than that with the gorge or live-bait; for when the hooks are baited, the angler casts in search, draws, raises, and sinks his bait, until he feels a bite. He then strikes strongly and drags or throws his victim on shore; for there is little fear of his tackle giving way, as that used in snap-fishing is of the largest and stoutest kind. "This hurried and unsportsman-like way of taking fish," it is observed in the *Troller's Guide*, "can only please those who value the game more than the sport afforded by killing a jack or pike with tackle which gives the fish a chance of escaping, and excites the angler's skill and patience, mixed with a certain pleasing anxiety, and the reward of his hopes. Neither has the snap-fisher so good a chance of success, unless he angles in a pond or piece of water where the jack or pike are very numerous or half starved, and will hazard their lives for almost any thing that comes in their way. But in rivers where they are well fed, worth killing, and rather scarce, the coarse snap-tackle, large hooks, &c. generally alarm them. On the whole, I think it is two to one against the snap in most rivers; and if there are many weeds in the water, the large hooks of the snap, by standing rank, are continually getting foul, damaging the bait, and causing much trouble and loss of time."

Pike sometimes rise at an artificial fly, especially in dark, windy days. The fly ought to be dressed upon a double hook, and composed of very gaudy materials. The head is formed of a little fur, some gold twist, and (if the angler's taste inclines that way, for it is probably a matter of indifference to the fish) two small black or blue beads for eyes. The body is framed rough, full, and round, the wings not parted, but made to stand upright on the back, with some small feathers continued down the back to the end of the tail, so that when finished they may exceed the length of the hook. The whole should be about the bulk of a wren.

During clear and calm weather in summer and autumn, pike take most freely about three in the afternoon: in winter they may be angled for with equal chances of success during the whole day; early in the morning and late in the evening are the periods best adapted for the spring.

This fish is also angled for in a variety of ways by fixed or set lines, and also by trimmers, or liggers, as they are provincially called in some parts of England. Horsea Mere and Heigham Sounds are two large pieces of water in the county of Norfolk, not far from Yarmouth, noted for their pike, as partly immortalised in old Camden's famous lines of lengthened sweetness long drawn out,—

" Horsey pike,
None like."

Mr. Yarrell received the following returns from a sporting gentleman, of four days' fishing with trimmers in these waters, in the month of March, 1834; viz. on the 11th at Heigham Sounds, 60 pike, weighing 280 pounds; on the 13th at Horsea Mere, 89 pike, weighing 379 pounds; on the 18th again at Horsea Mere, 49 pike, weighing 213 pounds; on the

19th at Heigham Sounds, 58 pike, weighing 263 pounds: the four days sport producing 256 fish, weighing together 1135 pounds.

As the mode of using trimmers in these extensive *broads* affords great diversion, and is rather peculiar, we shall here quote Mr. Yarrell's account of it. "I may state that the ligger or trimmer is a long cylindrical float, made of wood or cork, or rushes tied together at each end; to the middle of this float a string is fixed, in length from eight to fifteen feet; this string is wound round the float except two or three feet, when the trimmer is to be put into the water, and slightly fixed by a notch in the wood or cork, or by putting it between the ends of the rushes. The bait is fixed on the hook, and the hook fastened to the end of the pendent string, and the whole then dropped into the water. By this arrangement the bait floats at any required depth, which should have some reference to the temperature of the season,—pike swimming near the surface in fine warm weather, and deeper when it is colder, but generally keeping near its peculiar haunts. When the bait is seized by a pike, the jerk looses the fastening, and the whole string unwinds,—the wood, cork, or rushes, floating at the top, indicating what has occurred. Floats of wood or cork are generally painted, to render them more distinctly visible on the water to the fishers, who pursue their amusement and the liggers in boats. Floats of rushes are preferred to others, as least calculated to excite suspicion in the fish."*

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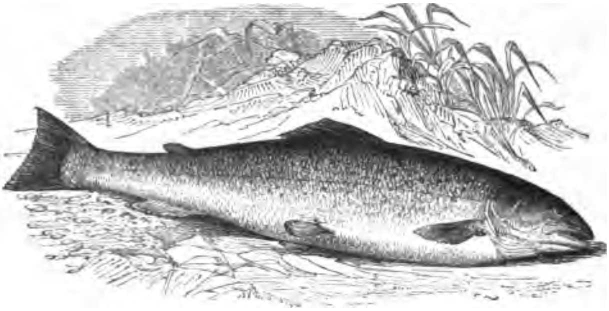
* BRITISH FISHES, vol. i. p. 388.

This is the only species of pike which occurs in our fresh waters, or in those of other parts of Europe. It is one of the largest of lake or river fishes, and indeed, if the accounts which some writers have given of it be not greatly exaggerated, it occasionally attains a size not greatly inferior to the gigantic inhabitants of the ocean. Individuals are recorded as measuring from five to eight feet in length, and its age is said to be as remarkable as its dimensions. The most famous of all pikes is that mentioned by Gesner, who states that it was taken in Suabia in the year 1497 with a brass ring attached to it, on which was engraven in Greek the following sentence (which we doubt was never carried into execution):—"I am the fish which was first of all put into this lake by the hands of the Governor of the Universe, Frederick the Second, the 5th of October, 1230." If it was 267 years of age, we see no particular reason why it should not (as is alleged) have weighed 350 pounds, and measured nineteen feet long.

Pike, however, are occasionally taken in the English lakes above thirty pounds in weight, and Dr. Grierson mentions one killed in loch Ken, in Galloway, which weighed 61 pounds. The colour of this fish in early life is of a greenish hue, but it afterwards becomes rather of a dusky olive brown upon the upper parts, marked on the sides with a lighter mottling of green and yellow, and passing into silvery white on the abdomen. We do not think highly of its flesh, although by many it is held in some esteem.



THE SALMON.*

This, in the angler's estimation, is the king of fishes, and it likewise occupies a most important place in the general good opinion of society—its merits as a living fish in cold water being only equalled by its excellence as a dead one in warm. It is a species of the greatest elegance of aspect, both in relation to form and colour; but its ordinary attributes being well-known and duly appreciated by a discerning public, we shall not here dilate upon them, but proceed to a general sketch of its natural history, and a brief summary of certain curious experimental observations and discoveries, which have been recently made regarding its earlier conditions of existence, by our ingenious friend and correspondent, Mr. Shaw.

The sea may be regarded as the genuine and best abode of this fine fish; for so soon as it has entered the rivers, it begins to deteriorate in condition, the scales lose their brilliant silvery lustre, and the flesh becomes soft, pale, and insipid. It seems induced to return to the fresh waters by a natural instinct, wisely implanted for the purposes of reproduction—an instinct which enables it to stem the current of raging rivers, to ascend precipitous falls, and to pass over weirs and similar obstacles of human intervention, which no other or less impressive power could either vanquish or evade. This desire to discover a suitable situation in which to deposit their ova, seems the chief if not the only reason for salmon thus seeking the "rivers of water;"—the supposed torment produced by *Caligus piscinus*, or other marine *adherents*, having little or no influence on such migration. Barren fish are believed to continue their usual haunts along the coast—at least numerous fine salmon occur in salt water at all seasons, and a few fresh-run and well-conditioned fish may be found in almost every large river in each successive month throughout the year. It is during this instinctive seeking for the spawning beds, that the greater number are captured by stake-net, net and coble, cruive, weir, and the rod; but it is only in the river, properly so called, that the sportsman can ply his vocation,—almost all attempts to angle salmon from the sea having hitherto proved abortive.

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* *Salmo Salar*, Linn.

Rivers and streams which flow from large capacious lakes, are sooner frequented by fresh-run spring salmon, than such as derive their sources from numerously divided mountain rills,—being clearer on account of their mud having been previously deposited in the lap of their nursing mother, and warmer by reason of the receptive depth of that same parent. As the season advances, the number of ascending fish increases, and it has been observed that in this upland migration the proportion of early females somewhat exceeds that of males. Mr. Young of the Shin-fishery (Sutherlandshire), informed us some years ago, that the Shin salmon had begun to spawn earlier since they were protected from the leister, and other modes of poaching. Most of the heavy earlier autumnal fish were formerly destroyed, and few spawned till November; but during the then preceding season (1833) salmon were seen depositing their ova by the 14th of September. During one of our visits to Sutherland, we found stout grilse (three pounds and upwards,) beginning to ascend the rivers by the 30th of May. They had indeed been observed as early as the 15th of that month.

It is chiefly, however, towards autumn that the heavy fish find their way to the actual spawning beds, which are often formed either in the shallow tributaries of the larger rivers, or in the upland streams of these latter, at a great distance from the sea. Many fish, far advanced with spawn, are then destroyed by various means; for it too often happens, that the "needy and the greedy" are more desirous of immediate gain than regardful of the natural harvest of future years. At the same time, there is no need of being very sentimental on the subject. One man will hold up his hands in mournful reproval of another who has just killed a large female fish full of roe—he, the upholding reprover, having himself in the preceding spring, or even a few weeks before of that same melancholy autumn, killed his *dozens* of fair females—in better case no doubt—but which, had they been left to the guidance of "their own sweet will," would by that time have been precisely in the same condition. The chief difference is, that a female fish, far advanced in roe, and likewise far advanced up the country, is less worth eating, and therefore, in one sense, less worth killing than another of slimmer form and more silvery lustre, who is kept in active exercise by seals and porpoises at the river's mouth, or near that litigated line,

> "Where ocean trembles for her green domain,"

as, indeed, she has grievous *cause* to do, when a jury of her countrymen declare that she is not the sea.*

Salmon generally delay entering the rivers in great numbers until the streams become somewhat swollen by rains,—although in the larger rivers there may be said to be a limited daily *run*. When the *fresh* or flood has fairly mingled with, or powerfully pervaded the estuaries, the run of fish is often very great, more especially if there has previously occurred a long continued course of dry weather. In the latter state of matters (before the fresh) these finny tribes will congregate at the mouths of rivers, as if deterred from entering by some principle of non-intrusion, and will not run the risk of a *Sunday slap*, however harmoniously called to do so by some powerful patron in the uplands. They are then seen, and not unfrequently taken, in vast numbers, but will not attempt to ascend,—knowing either by the clearness of the intermingling river, or by some instinctive feeling, that the supply of water by no means equals the demand. But as the fresh approaches, an increased activity may be perceived among them, and mighty is then the waving of powerful pectorals, and of broad-finned swinging tails. This change is probably indicated instantaneously by the perceptive power of the nostrils, and to this same sense may possibly be attributed the singular fact of the greater proportion of salmon returning to the very streams in which they had their birth. As soon as the fresh water suffices for their migratory purposes, they enter the river, and advance rapidly so long as the flood continues,—seldom resting in their course while the water continues in any way discoloured. We have never ourselves had any means of ascertaining the rate at which salmon travel,—but Sir William Jardine supposes it may be at a rate of from 10 to 25 miles a-day. In their more lengthened courses, however, up great rivers, where the beds are deep and the interruptions infrequent, the rate at which this powerful species journeys is probably much more rapid. " Those which leave the sea," says Mr. Scrope, " and go up the Tweed on the Saturday night at 12 o'clock, after which time no nets are worked till the Sabbath is past, are found and taken on the following Monday near St. Boswell's,—a distance, as the river winds, of about 40 miles. This I have frequently experienced."[*] It has also been observed, that if danger appears to threaten them, or if they seek to avoid a sudden snare, the rapidity of their swimming is so great that the eye can scarcely follow them. "Experience has proved, that in tranquil lakes, they can go eight or ten leagues in an hour, and about twenty-four feet in a second. This rate of going would give 86,400 feet in an hour, and suppose the faculty of making the tour of the globe in some weeks."[†]

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* We here allude more particularly to the disputed case of the Cromarty stake-nets,—Hay Mackenzie and others *v.* Horne, decided at Edinburgh against the defendant (the judicial factor), but withdrawn by the suspenders on the eve of a new trial (bill of exceptions having been allowed on appeal to the House of Lords) at Inverness.

We know as yet too little regarding the identity of foreign species with our own, to be able to deduce any general law from special facts derived from distant sources,—but if, as many suppose, our salmon reaches the slopes of the Cordilleras by means of the far flowing and magnificent Maragnon, then it must run a course of some 800 leagues. Bearing in mind, however, that the salmon is truly a northern fish, and also remembering those laws of geographical distribution which regulate, and with few exceptions circumscribe, the localities of living creatures, we think it more than likely that the South American salmon belongs to another species. We know, however, that our common kind (*Salmo salar*) although it does not occur in any part of the great basin of the Mediterranean, makes its way by the Elbe into Bohemia, and through the Loire as far as the environs of Puy, in the ancient Velay. We also know that it works its way up the Rhine, and visits a portion of the rivers of Switzerland, although the irresistible torrent of the Falls of Schaffhausen—that "Hell of Waters" as Lord Byron would have called it—prevents its ingress to any portion of the basin of the great lake of Constance. But we feel less assured of its occurrence in the Persian Gulf, and greatly doubt the identity of the species known to inhabit the Caspian sea. Neither can we credit that it advances unrepelled by the gloomy terrors of a subterranean journey,—"a dim and perilous way,"—and that salmon from the Gulf, adorned by the fanciful Persians with rings of gold and silver, have been actually found within that self-containing sea.

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[*] *Days and Nights of Salmon Fishing on the Tweed.* By William Scrope, Esq., F. L. S. This work has appeared since the publication of our first edition. We strongly recommend it to the attention of the man of taste and science, as well as to the practical angler.

[†] Griffith's *Animal Kingdom*, x. 471.

But, to return to our own sweet lakes and rivers, our still St. Maries, and our gentle Yarrows (alas! alas!

A trouble, not of clouds, or weeping rain,
Nor of the setting sun's pathetic light
Engendered hangs o'er Eildon's triple height:
Spirits of Power, assembled there, complain
For kindred power departed from their sight;
While Tweed, best pleased in chaunting a blithe strain,
Saddens his voice again, and yet again):

In our lower and clearer waters, salmon probably travel at a much slower rate than that above mentioned, as they often rest from time to time by the way,—taking a regular *lie* in some chosen spot, which they will return to daily so long as the river remains unfit for more continuous progress. Upon the least accession, however, to the water, either directly or from some swollen tributary, they are again on the alert,—and this increase is often felt by them several hours before the keenest or most experienced human eye can perceive a rise upon the river. Having ascended to a considerable height, they remain more stationary, or proceed more slowly with subsequent floods, till the spawn has attained a great increase of size. This increase (hyacinth-like) if not influenced by, is at least so connected with the commencement of the colder weather, as then to proceed at a more rapid rate. As the ova acquire their full development, the symmetry of the maternal form becomes disfigured, the size of the female seeming disproportionately large, and her paler portions losing the brightness of their silvery lustre, become dull and grey. The male too, as if oppressed by paternal anxiety, and conscious of the difficulty of providing suddenly for several hundred thousand children (hear this, ye parents who complain occasionally of having twins) grows lank and lean along the back, his muzzle lengthens, and the under jaw turning upwards in the form of a snout, is received into a kind of hollow in the nose, before the intermaxillary bone. The colours and markings become brown and red, rather than blue and silver, those of the head and gill-covers being particularly brilliant, and disposed in lines, almost like those that mark the species of the genus *Labrus*. In this state the common salmon received from Baron Cuvier the erroneous name of *Salmo hamatus*, as if it were a distinct species,*—

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* *Règne Animal*, t. ii. p. 303.

so difficult may it sometimes be for a philosopher in a great city to acquire the knowledge of a fact, elsewhere known familiarly from boyhood, by lonely herdsmen on ten thousand hills. How the Ettrick Shepherd would have marvelled that such a thing could be! Yet James Hogg himself was not seldom a marvellous man in his narrations. To proceed. In this full breeding dress the male and female seek some rippling ford or shallow stream, and commence to excavate a spawning trench or furrow. The usual statement or received opinion regarding this portion of their history is, that both sexes aid in the removal of the gravel, and that they chiefly use their heads or snouts,—the upturning of the under jaw in the male being in fact described by almost all authors as the very implement formed by nature for the special purpose.

But (to digress again for a moment) writers on this, and innumerable other subjects, may be likened to a flock of sheep about to enter park or pasture ground. The way is by no means narrow, and there is much hallooing with stentorian lungs, while the arms of brawny butchers wave like wind mills, and shepherds' dogs utter their short uneasy bark, with burning breath, fierce eyes, and fiery tongue; but not a fleece of all that woolly mass will move an inch. Then all at once, for no apparent reason,—at least for none which did not exist before,—one of their number springs at least a couple of yards into the buxom air, which proving no "fenced brazen wall" as it was deemed, admits him to pastures green, and instantaneously the whole flock, like a troop of voltigeurs, bolt boldly onwards, bound after bound, as if an earthquake's mouth did gape beneath them. Now your " men wat writes" are just precisely animals of this description, barring (we fear and mourn,) that their coats are far more thread bare, themselves more gaunt and grim, and their other habits rather those of fleecing than being fleeced. They for a time (and many times) compose confusedly some huddled statement, of which one portion knocks the other down, and the spread of knowledge looks extremely thin,—till some one bolder or more desperate than the rest (or driven by fear or hunger), makes a sudden spring upwards into the world of imagination, where he invents a round unvarnished tale of circumstantial truth,—

> " Of truth severe, in fairy fiction dressed."

Away go the others through that glorious gap; and the fond admiring public finding the stream of history so continuous, and concordant as Cruden on the point in question (whatever it may be), would just as soon " doubt that the stars are fire," as harbour the least misgiving as to what it sees in print. And so the matter is settled for a hundred years. But then comes a sturdy observer actually with his eyes open, and finds that if he chooses to use them he can see; so he hies him to the wood (that Birken Shaw is sinewy, tough, and strong), cuts his rod, and laying about among the " contributors," he " whips the offending Adam out of them" in less than no time,—and stating the simple truth to the discomfited philosophers, he broadly illustrates the difference between what Wordsworth calls, "A Fact and an Imagination."

To resume. Mr. Shaw of Drumlanrig informs us, that so far as his own observations go—and he in no way desires to gainsay the actual *views* of others,—the trough or spawning bed is excavated by the female alone, and by means not of the snout, but of a peculiar action of the tail, by which she both removes the gravel, and replaces it over the eggs when these are laid.* The process of laying usually occupies three or four days, and the hatching of the ova is regulated in a great measure by the temperature of the season. In severe winters the principle of life is slowly developed. Thus Mr. Shaw found by experiment, that ova placed in a stream of spring water of the average temperature of 40°, exhibited the embryo fish (visible to the naked eye), by the end of the 60th day, and were hatched on the 108th day after impregnation. Ova deposited by the same parent on the same day in the *river* (the average temperature of which for eight weeks had not exceeded 33°), did not produce visible young until the 90th day, and 131 days elapsed before their final hatching. We shall return to the young in a few minutes, but must in the meantime look after the old fish, which, at this period, are often improvidently struck through with the leister in shallow waters; and one of which, in a certain Æsopian dialogue with a plaided poacher, who is supposed to have asked the transfixed salmon how he felt himself, replied with great and rather ready composure, "nane the better o' your *spearin'*."

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* We may here note that the same observation or rather inference had (unknown to Mr. Shaw) been made by Mr. Potts, in relation to the Tweed salmon, as quoted long ago in Pennant's *British Zoology*. That gentleman regarded the tail as the instrument by which the gravel is displaced, in consequence of his having frequently found that part rubbed or abraded.

After the important process of spawning has been accomplished, both sexes are reduced to a state of remarkable emaciation. But ere long the lengthened snout, hooked jaws, and ruddy hues are modified or changed,—the old scales are cast—the silvery coating begins to shew itself—and the fish retire for a time to some quiet pool to regain their strength, and nourish their new attire. They finally re-descend to the sea by easy stages, where their former condition and brilliant lustre are soon restored—their strength invigorated—and all their functions so repaired and completed, as to enable them, ere long, to renew their visit to the flowing streams, again to multiply their race.

So much for the old people. Let us now enquire a little after the children, whom we left a few pages back, wriggling their way into life, through nearly a foot of supercumbent gravel.

If the reader is sleeping or inclined to sleep,—if, his chin upon his chest, he has allowed our work to fall upon the fender, he may let it lie if resting on the rug, but if its leaves are crumpling and curling with heat beneath the grate, mid sinful dust and ashes, we request that he will pick it up instanter, and place it where he may. If, again, he is actually awake, and listening steadily to our piscatorial pleadings, let him not start suddenly when we put to him the question, "what is a parr?" This is the only interrogatory we ever had the honour to address to Lord Brougham, and we believe it is the first ever put to his Lordship, either by ourself or any body else, which he was unable to answer. We shall not, however, at present carry the question by salmon-peal into the House of Lords, but state the case as clearly as we can, and far more briefly than it ever was before. The answer is this,—Othello's occupation's gone,—"There is no such fish as a parr."

It is pleasant to see Sir William Jardine and Dr. Knox, Mr. Selby and Dr. Fleming, Mr. James Wilson (a brother of Professor Wilson's) and Dr. Richardson, not exactly puzzling their brains about this vexed question, for the question seemed quite happy, and so assuredly were they, good easy men, but resting satisfied in the assurance that they understood its bearings in every possible point, and could "box the compass" on the subject, to the clear conviction of each rational being in the three kingdoms and the town of Berwick-upon-Tweed. But, as it is now known to the world in general,—and we hope admitted by themselves in particular—that these gentlemen knew nothing at all about the matter, we may be here allowed to pass from their *opinions* and report the actual *facts* as proved by Mr. Shaw.

The experimental researches of this ingenious observer were carried on for a series of years, have now been frequently repeated with the same results, and may be perfectly relied upon, both for their accuracy and conclusiveness. He captured a pair of breeding salmon in the river Nith on the 27th January, by means of a large landing net, and removed them to a small trench previously formed along side the river. In this trench the deposition of the ova and the process of *milting* were effected by pressure, (as detailed by Mr Shaw,*) and the impregnated spawn was carefully collected in a large earthen-ware basin, and transferred to a streamlet, the feeder of a small pond, twenty-two feet in length by eighteen in breadth, and so protected by pipes and gratings that no other fish could voluntarily enter it either by ascent or descent. The temperature of the streamlet at this time was 40°, that of the river water 36°. On the 21st March (54 days after the process above alluded to), the embryo fishes were visible to the naked eye. On the 7th May (101 days), they had "burst their cerements," and were to be found among the shingle, the temperature of the water being at this time 43°, of the atmosphere 45°.† The excluded fry continues to be nourished for some time by the remains of the yolk or vitelline portion of the ovum, which adheres to the fish for a considerable period, not being altogether absorbed till the lapse of several weeks.*

A principal point regarding the corresponding fry which were hatched in the natural spawning beds of the river, was, no doubt, to watch for their alleged immediate or very speedy departure to the sea, but nothing of the kind could be eventually detected. Specimens taken from the pond on the 24th June (48 days old) measured only an inch, on the 7th July (two months old) an inch and a half, on the 7th September (four months old) two inches and a half, and on the 7th November (six months old) three inches and a quarter. Some slight variation was observable in size between the individuals in different ponds, but the whole had precisely the aspect and character of small *parr* (commonly so called), and did not differ from those in the natural beds of the river, except that the latter were of a darker colour, a difference to be accounted for by the water being less pure and translucent.* This agreement, of itself, went far to prove that naturalists, and all other observers, had erred in supposing that salmon fry (or smolts) performed their journey to the sea a few weeks after hatching, as they were now—in November 1837—six months old, and exhibited no desire to change their quarters either in pond or river. We think, then, that at this stage of the business,—setting the parr question, however interesting, altogether aside—Mr Shaw proved the important fact, hitherto denied by naturalists, *that young salmon do not proceed to the sea the same year in which they are hatched.*

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* *Edinburgh New Phil. Jour.* for January 1838.

† We have already mentioned that exclusion takes place at somewhat variable periods, in accordance with the temperature of particular seasons, the range of variation extending from three weeks to a month.

‡ The period of this absorption also seems to vary with the temperature and other circumstances, ranging from 27 to 50 days.

During the winter months, the low temperature both of air and water, and the consequent deficiency of insect food, prevent almost all increase of growth. Thus a specimen (marked No. 6.) exhibited to the Royal Society of Edinburgh, was taken from the pond in the middle of February 1838—it was then nine months old—but its dimensions scarcely differ from those of its predecessor of November. But another specimen, (marked No. 7,) taken from the pond on the 10th May,—by which time it was twelve months old—though it measured only 3¾ inches, was much improved in general condition, and had exchanged its dusky autumnal and winter coating for what may be called its summer aspect. It now corresponds, both in age and size, with those which, in the natural bed of the river, are called "May Parr," and it is these latter alone,—except the newly hatched fry lying concealed among the shingle,—which are found in the river after the early part of May, as about that period the two year olds (to be ere long described) have all migrated sea-wards. These May parr are to be regarded as identical with the "Pinks of the River Hodder," alluded to by Mr. Yarrell, and both are the produce of the preceding spring, instead of being, as usually supposed, only a few weeks old. They remain all summer and throughout the ensuing winter in the river, and are neither more nor less than those little fishes, *commonly called parr*, which afford the young (and sometimes elderly) angler so much amusement with the rod, throughout the months of August, September, and October. At this stage of Mr Shaw's proceedings, then, he proved *that young salmon do not go down to the sea*

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* Mr. Shaw has observed, in reply to objections regarding his constructed ponds, as possibly limiting the growth of his fry by affording an insufficient supply of food, that these ponds actually abound with all the ordinary insect food of young fishes.

even in the spring of the first year after that in which they are hatched.

We may here briefly notice a fact in the physical history of the male parr, commented on by Mr. Shaw—though previously well known to other observers—which, if not an anomaly in nature, is at least "of a strange order." In the autumn of the second year they become fitted for generative purposes, and are soon after seen to associate with the adult female salmon. Specimen No. 8 of the Royal Society's Collection is a characteristic example of the parr (usually so called). It was taken from the pond on 14th November 1838, being then 18 months old; and at the same period all the males of Mr. Shaw's different broods exhibited a matured sexual character in relation to the milt, although none of the females of the same age shewed any signs of *roe.* Those in the natural bed of the river manifested a corresponding character of maturity in the male,—of immaturity in the female.

The great constitutional change which converts an old or mature parr into a young or immature salmon, usually takes place in the month of April of the second season after that in which the fry was hatched. The Royal Society specimens, Nos. 10 and 11, beautifully illustrate this change. No. 10 was taken from the pond on the 5th of January 1839. It then measured 6 inches in length, and was 20 months old. It still exhibits all the ordinary characters of the parr, commonly so called. At this period No. 11 presented a corresponding appearance in all points; but it was allowed to survive till the

24th May, by which time it had completed its second year. During the lapse of these additional four months, it gained only half an inch in length, but it *cast off the livery of the parr, and assumed that of the salmon*,—this remarkable change consisting chiefly in the following particulars. The black spots upon the opercles disappeared; the pale coloured pectoral fins became deeply suffused by an inky hue at their extremities; the broad perpendicular bars or blotches on the sides became effaced; and the prevailing hues of dusky brown and yellowish white were converted into a dark bluish black upon the back, and into silvery white upon the lower sides and abdomen.* Various other specimens exhibited to the Royal Society exemplify the same change, and some of these distinctly show, as it were, the intermediate or transitionary state between the parr and smolt. The whole, however, belonged to broods which, as already mentioned, were the original produce of an adult male and female salmon, and so could not be otherwise than the natural young of these fishes. Mr. Shaw then, we may here observe, has proved two facts of the highest importance both in the natural and economical history of the species in question, 1st, *That parr are the young of salmon, being convertible into smolts;* and 2dly, that the main body, if not the whole of these smolts, *do not proceed to the sea until the second spring after that in which they are hatched.*[*]

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* Mr. Shaw has, moreover, observed, that when this striking change takes place in the external aspect of the fry, a marked alteration also occurs in their social habits: "while in the parr state, they show no disposition to congregate, but each individual occupies a particular station in the ponds, and should any one quit his place with the view of occupying the station already possessed by another, the intruder is at once expelled with an apparent degree of violence. But so soon as the whole brood has perfected the migratory dress, they immediately congregate into a shoal, and exhibit an anxious desire to effect their escape by scouring all over the ponds, leaping and sporting, and altogether displaying a vastly increased degree of activity."

To state the matter shortly and syllogistically, we think we are entitled to say, in reference to the two specimens last alluded to: "These are young salmon,—one of these is a parr,—therefore the parr is the young of the salmon." But this neither ourself nor any body else, whether peer or peasant, could have alleged as a fact capable of demonstration, without the tentative, long continued, and now perfectly conclusive experiments of Mr. Shaw.[†]

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[*] Although Mr. Shaw could never perceive any of the river fry attain the migratory state till the second spring after that in which they were hatched, he informs us that one or two individuals of each of his own broods assumed that condition at the age of 12 months. This circumstance he is inclined to attribute to the higher temperature of the spring water ponds having hastened the ordinary natural change: and he deems himself strongly supported in this opinion by the fact, that no similar instance of an early or premature change has occurred among other individuals reared in corresponding ponds supplied with water from a rivulet, the temperature of which throughout the year, ranges very equally with that of the river Nith.

[†] In the present summary of the parr question, we avail ourselves, in the first place, of our own knowledge of the subject, secondly, of Mr. Shaw's earlier papers published in the *Edinburgh New Philosophical Journal* (July 1836—January 1838), and of his more recent communication on the same subject, crowned by the Keith Testimonial (*Transactions of the Royal Society of Edinburgh*, vol. xiv. Part II.); and thirdly, of a learned and lucid exposition of the case in the CCXCIV. No. of *Blackwood's Edinburgh Magazine.* We may here add, that Mr Shaw's views have been confirmed by Sir William Jardine, Bart., Mr Young of Invershin, and others, and are now universally adopted both by anglers and men of science.

The ingenious observer just named, has not only settled this disputed point to our own satisfaction, and consequently to that of the world in general, but has, moreover, carried on his practical researches to illustrate, if not explain, that singular peculiarity already alluded to, viz. the sexual maturity of the male parr. The frequent observance of this maturity, and of the association of parr and female adult salmon, suggested the idea of the following curious and successful experiment. In the month of January, Mr. Shaw took a female salmon, weighing 14 lbs., from her natural spawning-bed,—from whence he also took a male parr, weighing 1½ oz. With the milt of the latter, he fecundated the ova of the former, and placing the spawn in the streamlet which feeds one of his ponds, he watched its growth, as he had that of the salmon spawn fecundated in the ordinary way, and found both the hatching and subsequent growth to correspond, in all points, with the usual on-goings of nature. These experiments were repeated with the same results during the winter of 1838, and the parrs (taken from the river) which had been used as males, were kept alive till spring, when they assumed the migratory dress of young salmon, "and no mistake." He then tried a corresponding experiment by impregnating the ova of three adult salmon taken from the river, with the milt of three parr bred in the confinement of the ponds, and the result was likewise the same, both as to hatching and final growth; this fact, showing at the same time the constitutional strength of the pond-bred parents, and that they had not deteriorated, or been altered in their natural character and attributes, as by some supposed. The individuals used in these experiments are preserved in the Museum of the Royal Society, where any one interested may satisfy himself regarding their identity with the so-called parr.

But one of the most singular and conclusive circumstances connected with these later experiments is this, that one of the male parrs so used (No. 12), was itself produced between a preceding parr and a female adult salmon—in other words, it was what Naturalists—in the days of the supposed specific distinction of the parr and salmon—would have called a hybrid or mule. Now, it is admitted by physiologists, that the general rule in relation to these mixed productions from kinds not specifically the same, is, that they do not breed. Yet this male parr, originally produced from a parr and salmon, has itself become the parent of a numerous and healthy progeny of most promising fry. It had, in fact, been objected to Mr Shaw's earlier experiments, that by a forced alliance between the parr and salmon, he had not proved their identity, but only succeeded in producing a hybrid,—thus "peopling the isle with monsters." The brood, however, in no way differs from those produced under ordinary circumstances, as may be seen by an inspection of specimens marked B. Mr Shaw has justly observed that if parr were actually a distinct species, the result of their attendance on the female salmon would produce universal and irremediable confusion among these migratory inhabitants of rivers, "from the circumstance of the male parrs in a breeding state occupying in great numbers the very centre of the salmon spawning-bed, while the female salmon herself is at the same instant pouring thousands of her ova into the very spot where they are thus genially congregated."*

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* Since the publication of the first edition of this work, an important paper, by Mr. Andrew Young, Invershin, Sutherlandshire, " On the Growth of Grilse and Salmon," has appeared in the *Transactions of the Royal Society of Edinburgh*, Vol. xv. Part III. Mr. Young has there taken up the question of the salmon's growth where it was necessarily left off by Mr. Shaw ; and although his labours are rather confirmatory than original, they are yet of great value, as bringing the subject into systematic form, and impressing it with the force and clearness of successful demonstration. He shows, by tabular lists, recording the results of his own experiments, that the increase in the dimensions of the smolts is extraordinary when they descend into the salt water. So far back as the months of April and May 1837, he marked a number of descending smolts by making a peculiar perforation in the caudal fin, by means of small nipping irons, constructed for the purpose. He recaptured a considerable number of them ascending the rivers as grilse in the course of the ensuing months of June and July, and weighing several pounds each, more or less, according to the length of their sojourn in the sea. In April and May of 1842 he marked a number of descending smolts, by clipping off the little adipose fin upon the back. In June and July he caught several of these returning up the river, and having his peculiar mark, *i. e.* the absence of the adipose fin. One marked in April, and recaptured towards the end of July, weighed 7 lbs. ; another marked in May, and recaptured also in July, weighed 3½ lbs. As the season advances grilse increase in size, those being the largest which remain the longest in the sea. They spawn in the rivers after their first ascent, and before they have become adult salmon.

Mr. Young also instituted another series of experiments for the purpose of showing the relationship of the grilse and adult salmon, and connecting, as it were, these final stages with each other. Thus in the spring of 1841, he marked a number of 4 lb. grilses after they had spawned, by fastening a piece of twisted wire through the back fin. They were immediately thrown into the river, and of course

But we fear we have been already too discursive and prolonged on these important points, and that our young pupils of the angle may, with truth, accuse us of cruelty in thus so long keeping "the rod suspended." Proceed we then to a short notice of the salmon, viewed in relation to the practice of the angler's art. This fine fish delights in large and streaming rivers. It is not only a rapid but an early riser, and bites best from six in the morning till eleven in the forenoon, and from three in the afternoon till sunset. A moderate breeze is of advantage; and

disappeared, speedily making their way downwards with the other spawned fishes to the sea. In the course of the summer he caught several of these 4 lb. grilses, grown in the course of four or five months, to fine full-formed salmon, ranging from 9 to 14 lbs., the difference still depending on the varying length of their sojourn in the sea. In January 1842 he repeated the plan of marking four pound grilses which had spawned, and were about to seek the sea, but instead of putting a piece of copper wire through the dorsal fin, he placed a piece of brass wire in the caudal one. On their return from the sea several specimens were captured,—salmon as before. We have seen and examined two of these fish, marked when 4 lb. grilse in January, and recaptured as salmon on the 4th and 14th of July, weighing respectively eight and nine pounds.

Salmon in the perfect state also increase rapidly on reaching the sea from year to year. Thus a spawned salmon weighing 12 lbs. was marked on the 4th of March, and was recaptured on its return to the river on the 10th of July, weighing 18 lbs. Mr. Young is of opinion that salmon rather diminish than increase in size during their sojourn in rivers, and that the higher they ascend the more they deteriorate both in weight and quality. We agree in the latter clause of the verse, although we think that these fish decrease rather in condition than dimensions; that is, we believe that in spite of a falling off in weight, their bones and organic structure are assuredly enlarged, and their bodies lengthened, in such a way as to fit their general form for a rapidly increased development, so soon as they are again subjected to the fattening influence of the sea.

the best months are March, April, May, and June. The salmon is justly regarded by the angler as the king of fish; and when we consider that they occasionally measure four feet in length, and weigh upwards of 70 pounds, we may conceive how difficult a capture and how valuable a prize they sometimes prove.

In relation to the size of salmon, we may here observe that Pennant makes mention of one which weighed 74 pounds; and although we now regard, with something akin to wonder, a fish which weighs even the half of that amount, there is no doubt that not many years ago, salmon of 40 pounds were much more frequent than in these degenerate days. The absence of salmon of the largest class from many of our Scotch rivers, where they formerly abounded, is in fact owing to the injudicious perfection of our fisheries, which occasions the constant capture of the species in the state of grilse, or other even earlier condition; and the chances are, by consequence, greatly against any individual escaping the various dangers by which it is environed, for such a succession of years as is likely to admit of its attaining to its full dimensions. The destruction by poachers in the higher parts of the rivers, of the large enfeebled *kelts*, or fish which have completed their spawning operations, is also extremely prejudicial; for these individuals—almost utterly useless as food at the time alluded to—would, if allowed to descend to the salubrious sea, ere long revisit their native streams, greatly increased in size, and full of health and vigour.

The season of 1835, was more than usually productive of large salmon. One was killed weighing above 50 pounds, at the mouth of the Leven in Dumbartonshire. A notice appeared in the newspapers of one that weighed 55 pounds. Mr. Yarrell had occasion to see two fish varying from 38 to 40 pounds each. But we believe the largest salmon ever known, was that which came into the possession of Mr Groves, fishmonger, Bond Street, which weighed 83 pounds. It was a female, comparatively short for its weight, but of unusual depth and thickness. Its flesh was finely coloured, and of high flavour. The largest we ever heard of as having been killed in Scotland *with the rod*, was that mentioned by Mr. Lascelles. It weighed 54½ pounds.

The most successful bait, as well as the most agreeable in the usage, is the artificial fly. This is alleged to be made in imitation both of dragonflies and butterflies of various kinds; but the principles which we have already endeavoured to establish at the commencement of this article, make it unnecessary to describe the so-called natural species, which in fact do not exist. Even those who most warmly advocate the necessity of imitating existing insects in the formation of their lures, admit that the salmon is so capricious as frequently to rise at an artificial fly which bears no resemblance to any known form of insect life.

The following are the descriptions of six artificial flies which have been found very successful in raising salmon. See *Salmon-flies*, Plate 1st. Fig. 1. is recommended as a spring-fly, and is composed of the following materials:—Wings of the dark mottled brown or blackish feather of a turkey; body of orange camlet mixed with a little mohair; and a dusky red or bright brown cock's hackle, plucked from the back where the fibres are longest, for the so-called legs. The hook should be of the same size as represented in the plate; and it has been observed that all large salmon-flies should be dressed upon double gut, and that the silk in dressing be brought beyond the shank of the hook, and wrapped four or five times round the gut, so that it may not be speedily cut by the sharpness of the steel.* This same fly, dressed with the wings of a somewhat brighter shade, and with the addition of a little gold wire or twist wrapped round the body at equal distances, will also serve for a more advanced season of the year. Fig. 2. is of a smaller size, and may sometimes be dressed upon very strong single gut. Any feather of a coppery or dingy yellow colour, if not too coarse in the fibres, will be suitable for the wings; the body is of lemon-coloured mohair, mixed with a small portion of light-brown fur or camlet, with a pale dusky ginger hackle over the whole. The chief object to be attended to in dressing this fly, is to produce that uniform hue, devoid of gaudy colouring, from which it has received the name of the *Quaker-fly*. It must not, however, be confounded with the *Martyn-barry*, which is a smaller fly for trouts. Of Fig. 4. (*Salmon flies*, Plate II.) the wings are made from the plumes of a cormorant, or from the mottled feathers of a dark mallard: the body is of dark sable, ribbed with gold wire, over which a dusky red hackle is thickly wound; the mottled feathers of a drake are used for the tail, and, previous to fastening off, a small portion of flos silk should be unravelled and fastened at the extremity of the body. This fly, though, like the preceding, of a somewhat sombre cast, is frequently used with success in summer. Fig. 5, (same plate) belongs to the gaudy class of lures, " which," says Mr. Bainbridge, " however fanciful or varied in shade or materials, will frequently raise fish when all the imitations of nature have proved unsuccessful; indeed, so fastidious and whimsical are the salmon at times, that the more brilliant and extravagant the fly, the more certain is the angler of diversion." In this, of course, we perfectly agree. The wings of the fly in question are formed of the extreme end of a Guinea fowl's feather, not stripped, but having the fibres remaining on both sides of the middle stem. A blood-red hackle is fastened on with the wings, and so arranged as to extend beyond them; the dyed feathers used by military men will suit, if another showy biped, the scarlet macaw, is not accessible. The green feather which forms the eye of the peacock's tail should be fastened at the head, and left hanging downwards, so as to cover the body for the space of half an inch, and a few filaments of the same part of the feather may be fastened at the tail. Fig. 3, (Pl. I.) has the wings formed from the darkish brown speckled portion of a bittern's wing stripped off from the stem; the head ought to be of the same colours as the body, which

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* Bainbridge's *Fly-Fisher's Guide*, p. 96.

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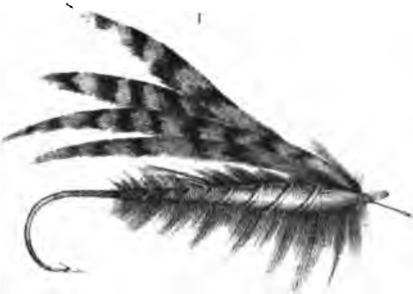
SALMON FLIES. PLATE I.

1



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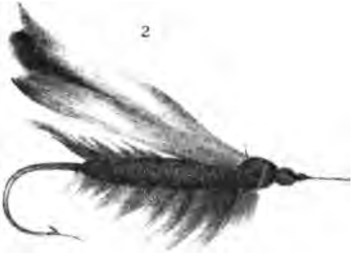

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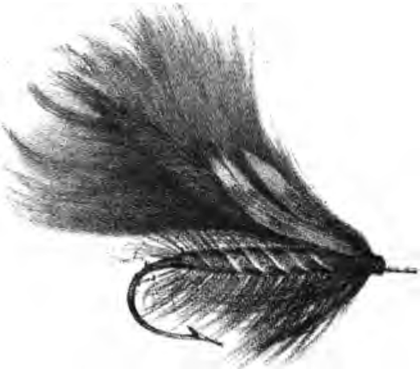

Nichol lithog

[illegible] of the rod, h[illegible] [illegible]
and deer [illegible] [illegible] a [illegible]
is put over the body [illegible] [illegible]
[illegible] a pair of [illegible] [illegible]
as the wings [illegible] [illegible]
wings are formed of the [illegible]
[illegible]
The best mixture for the body [illegible]
hair from a bear's skin [illegible]
red and hair; gold twist [illegible]
[illegible] and a red one a little [illegible]
red mohair for the [illegible]
we might enumerate the [illegible]
[illegible] fisher, the [illegible] [illegible]
[illegible] pheasant, the grey mallard [illegible]
but such as we have now described [illegible] in
our present purpose.*

---

* For the usage of these [illegible]
[illegible] here are [illegible]
[illegible] as one [illegible]
[illegible] of a fishing friend [illegible]
[illegible] to pursue a [illegible] successful
[illegible] other rivers, [illegible]
[illegible] of [illegible]
[illegible] than in colour. A large [illegible]
and deep waters, and a smaller one [illegible]
[illegible] the general system. More [illegible]
[illegible] There are sixty [illegible]
I do not mean to say that [illegible]
that they are such as I have most [illegible]
they were tried by my [illegible]
manner as to make them cut away [illegible]
are known by different names; so that when I say to [illegible]
give me this or give me that, mentioning the [illegible]
comes, without the trouble of searching over the [illegible]

is formed of the reddish brown part of a hare's fur, and deep copper-coloured mohair; a bittern's hackle is put over the body for legs, and a forked tail is added, made of a pair of single filaments of the same feather as the wings. Of fig. 6, (Plate II.) the wings are formed of the mottled feathers of a peacock's wing, intermixed with any fine plain dusky red; the best mixture for the body is the light brown inner hair from a bear's skin, sable fur, and gold-coloured mohair; gold twist, a large black cock's hackle, and a red one a little larger, with a bit of deep red mohair for the head. In addition to these, we might enumerate the brown fly, the blue fly, the king fisher, the prime dun, the great palmer, the golden pheasant, the grey mallard, and many others; but such as we have now described may suffice for our present purpose.*

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* For the sake of those who considerately purchase our second edition, we shall here use the freedom to entomologize a little in Mr. Scrope's manor, as our purloining the following flies may enable such of our fishing friends as do not possess the "Days and Nights" before-named, to pursue a more successful course than hitherto. "As in all other rivers," observes our author, "so there are various flies made use of in the Tweed, but the variety consists more, I think, in size than in colour. A large fly, as I have said, for the heavy and deep waters, and a smaller one for the upper part of the river. That is the general system. More minute particulars I have already given. There are six flies which I have always found the most successful. I do not mean to say that they are the best that can be used, but only that they are such as I have most confidence in from experience. They were tried by my fisherman, Charles Purdie, and in such a manner as to make them cut away steadily through the water. They are known by different names; so that when I say to my fisherman give me this, or give me that, mentioning the patronymic, forth it comes, without the trouble of searching over the book myself."

It may be stated at once, and without reservation, that, so far from imitating nature, the maker of sal-

"Two of these flies are of the masculine gender, three of the feminine, and one of the neuter. The masculine are *Michael Scott* and *Kinmont Willie;* the feminine, *the Lady of Mertoun*, or the *Flower of Yarrow, Meg with the Muckle Mouth*, in her usual dress, and *Meg* in her bravery,—or, Scottice, *braws*. The fly of the neuter gender has been called *Toppy* from time immemorial.

No. 1. *Kinmont Willie.*

Wings—Mottled feather from under the wing of a male teal.
Head—Yellow wool.
Body—Fur of the hare's ear.
End of the body—Red wool.
Round the body—Black cock's hackle.

"I found this fly very successful in the Annan, when I lived at Kinmont, from which place it derives its name.

No. 2. *The Lady of Mertoun.*

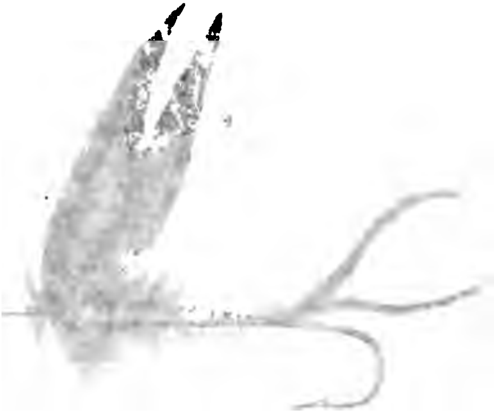
Wings—Same as No. 1.
Head—Crimson wool.
Body—Water rat's fur.
End of body—Crimson wool.
Tail—Yellow wool.
Round the body—Black cock's hackle.
End of body—A little red hackle.

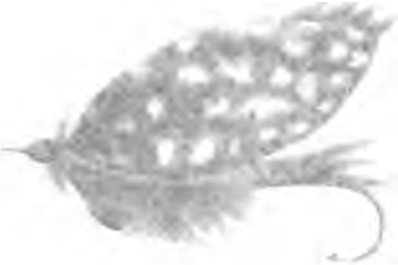
No. 3. *Toppy.*

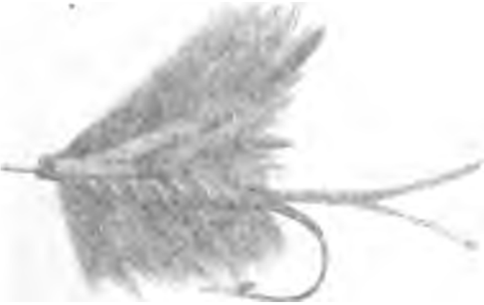
Wings—Black feather from a turkey's tail, tipped with white.
Head—Crimson wool.
Body—Black bullock's hair.
End of body—Crimson wool.
Tail—Yellow wool.
Body—Black cock's hackle.
End of body—Small piece of red cock's hackle.

No. 4. *Michael Scott*, a most killing wizard.

Wings—Mottled feather from the back of a drake.
Head—Yellow wool, with a little hare's fur next to it.
Body—Black wool.
End of the body—Fur from the hare's ear; next to the hare's ear crimson wool.
Tail—Yellow wool,







Natural size

[illegible] and [illegible] from imitating Nature [illegible]

[illegible] the gaudier, [illegible] *Michael* [illegible] *Lady of Mertoun*, the *T*[illegible] *Meg* [illegible] her best dress [illegible] her [illegible]—[illegible] the young [illegible] been [illegible] *Peggy* [illegible] in memory [illegible]

No. 1. *[illegible] Willie.*

Wings.—Mottled [illegible] from [illegible] the wing [illegible]

[illegible] yellow wool.

[illegible]—[illegible] hare's ear.

[illegible] body.—Red wool.

[illegible] body.—Black cock's hackle.

[illegible] very successful [illegible] the Annan, [illegible] from which place it derives its name.

No. 2. *The Lady of Mertoun.*

Wings.—Same as No. 1.

[illegible]—Crimson wool.

[illegible]—[illegible] as No. 1.

[illegible]—Crimson wool.

Tail.—[illegible] wool.

[illegible] body.—Black cock's hackle.

[illegible] body.—A little red hackle.

No. 3. *Toppy.*

Wings.—Black feather from a turkey's tail, tipped with white.

Head.—Crimson wool.

Body.—Black bullock's hair.

[illegible]—Crimson wool.

Tail.—Yellow wool.

Body.—Black cock's hackle.

End of the body.—Small piece of red cock's hackle.

No. 4. *Michael Scott*, a most killing wizard.

Wings.—Mottled feather from the back of a drake.

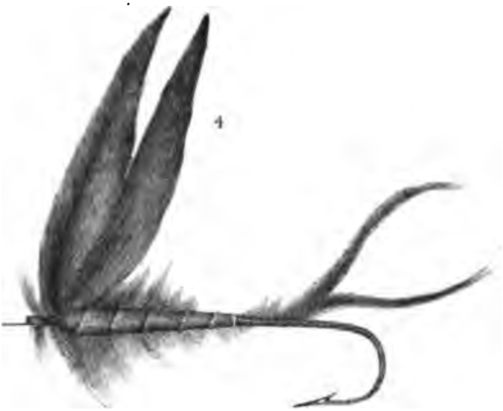
Head.—Yellow wool, with a little hare's fur next to it.

Body.—Black wool.

End of the body.—Fur from the hare's ear; next to the hare's ear crimson wool.

Tail.—Yellow wool.

4



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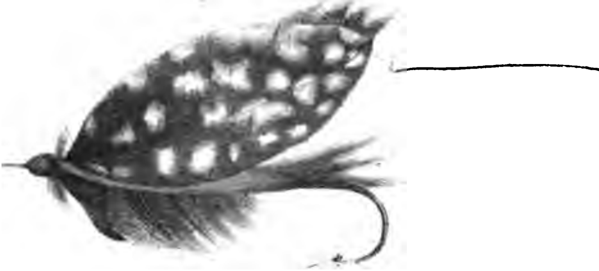

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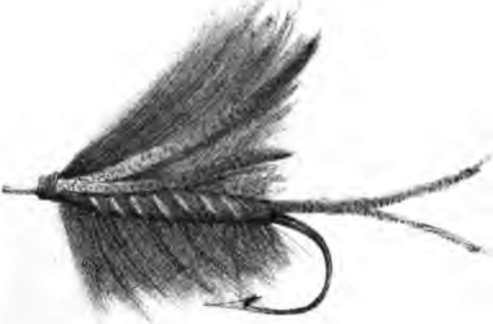

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mon flies can scarcely form them in too unnatural and extravagant a manner. Let him call in the aid of fancy at all times and places, at least in this country; for the cold and cloudy clime of Scotland assuredly furnishes nothing resembling the lures most frequently and most successfully used. The superabundant use of gold and silver wire ought, however, to be avoided, as it not only causes the fly to sink too much in the water, but prevents its being neatly or

---

Round the body—Black cock's hackle.
End of the body—Red cock's hackle.
Round the body—Gold twist, spirally.

No. 5. *Meg with the Muckle Mouth.*

Wings—From the tail of a brown turkey.
Head—Crimson wool.
Body—Yellow silk.
End of body—Crimson wool.
Tail—Yellow or orange wool.
Round the tail—Red cock's hackle.
Round the body—Gold twist, over it hackle mixed with colour, as above.

No. 6. *Meg in her Braws.*

Wings—Light brown, from the wing of a bittern.
Head—Yellow wool.
Next the head—Mottled blue feather from a jay's wing.
Body—Brown wool mixed with bullock's hair.
Towards the end of body—Green wool; next to that crimson wool.
Tail—Yellow wool.
Round the body—Gold twist; over that cock's hackle, black at the roots and red at the points.

"Concerning these flies," adds Mr Scrope, "I will note one thing, which is, that, if you rise a fish with the *Lady of Mertoun*, and he does not touch her, give him a rest, and come over him with *Toppy*, and you have him to a certainty, and *vice versa*. This I hold to be an invaluable secret, and it is the only change that, during my long practice, I have found eminently successful."

lightly thrown. Spring flies for salmon are usually made of a larger size, though not so gaudily dressed as those of summer.

A salmon rod is generally proportioned to the size of the river which the angler frequents; but it ought not to be less than 15 feet in length. Fish—by which, of course, we mean salmon, which is the angler's fish, *par excellence*,—may be killed easily enough with a light rod, but a heavier one gives increased facility and power. The reel ought to be sufficiently large to contain 80 or 90 yards, or upwards, so as to admit of abundance of line being given out when required; for many fish when struck, run out to a great distance, and with such immense rapidity as to prevent the possibility of the angler's moving in the proper direction with sufficient quickness. A salmon, for the most part, darts violently up the stream; and, as the desired command is more easily kept with a short than a long line, it is advisable to prevent his getting too far ahead, by keeping the rod well up, 45° and more, and by running towards him along the margin. On gaining the head of the current, he frequently throws himself several times out of the water, on which occasions the angler must yield him freely a little of the line; but, during his general and less violent manœuvring, he will, of course, be the sooner exhausted the more firmly he is held. When he appears to be making for some safe haunt or secret sheltering place, the great object is to turn him towards safer ground, either by relying on the soundness of the tackle, or, if he proves very powerful as well as very obstinate, then a pebble or two may be thrown so as to fall a little in advance of his position, and he will probably turn himself round. Some fish become very sulky, and will lie, after being hooked, for a long time motionless near the bottom. In this case also the pebbles must be had recourse to, for the more a fish is kept in motion the sooner he becomes exhausted. When he begins to show his side, and exhibits other unequivocal symptoms of exhaustion, a favourable landing-place should be looked for; and, when the proper time arrives, which can only be learned by the (sometimes dearly bought) lessons of experience, then is he to be drawn by degrees to the bank or shore, and secured either by means of the gaff, or a firm grasp above the tail.

When feeding, salmon are usually found at the foot of a strong stream terminating in an eddy or whirlpool. "And first," says our father Walton, "you shall observe that usually he stays not long in a place, as trouts will, but, as I said, covets still to go nearer the spring head; and that he does not, as the trout and many other fish, lie near the water side or bank, or roots of trees, but swims in the deep and broad parts of the water, and usually in the middle, and near the ground, and that there you are to fish for him; and that he is to be caught as the trout is, with a worm, a minnow, which some call a penk, or with a fly."

Salmon are often killed in lochs, but they are seldom then in good condition, being as "hard run up," as the Honourable Captain ——, R.N. (who, by the bye, forgot to return the trifling sum he did us the honour to borrow at ——,) though certainly possessed of less Marine Assurance. Yet it is a fine and pleasant thing to kill a salmon in a loch, as the angler seldom expects it, and is probably only armed with common trout tackle, so that he must quickly summon to his aid in that encounter whatever store he holds of coolness, courage, and dexterity. The sight of a large silvery salmon is indeed a spectacle sufficing any where to excite our unfeigned admiration, but when seen suddenly springing from out the bosom of a lonesome loch, it comes upon us like a glad surprise. We know several lochs in Scotland, and in these several sandy spits of bottom—excuse our peculiar phraseology—where we would engage to kill several salmon any day during several months of the year, but there are several people whom we don't wish to know of this, and therefore we won't here mention the subject more particularly at present.

When the river water is either too much discoloured for the use of the artificial fly, or, running into the opposite extreme, becomes in dry weather too clear and bright, salmon may be successfully angled for with the worm. The worm is also an approved bait in cold or wintry weather, when fish don't care to rise towards the surface. In these cases trolling tackle is sometimes used.

In trolling with minnow, or other small fish, the foot lengths ought to be about three yards long, and furnished with one or two swivels, to prevent the line from twisting, as well as to enable the bait to play freely. A lead or shot proportioned to the strength of the stream should be fastened to the line, about a foot above the bait. The top of the rod should be stiffer than that used for fly fishing; and, when the hook is baited, it ought to be thrown first across, and then drawn up the stream.

But why prolong our precepts,—for what knowledge can a man acquire of this or any other glorious art by reading? Or what will book-learning avail when one comes not only to "speak o' loupin' ow'r a linn," but actually to do it, or lose his fish, which has already done it;—and see! on either side how thick a skreen of rocks and tangled brush-wood! Where be your rules, Oh angler, cut and dry, when a man begins to change his mind—and wishes to change his direction—'mid some delusive ford of unknown depth, when giant trees are vehemently stooping,—the howling winds above,—beneath, "the hell of waters?" Can a Christian learn to skate by the fire-side? Can a sailor be taught to leap a five-barred gate on board of ship, or avoid saddle-sickness when on actual horse-back, by studying either "Riding made Easy," or a treatise on tanning? Can a landsman escape sea-sickness when at sea, by acquiring a knowledge of Clerk's "Navel Tactics" on shore? Can an ass become a philosopher by reading an Encyclopædia both by day and night? Can a philosopher cease to be an ass by not reading it either by night or day? Never!![*]

In sad and simple truth, the writing of a book on almost any subject is what J. G. L. would not inelegantly call "humbug." Then why do you write one yourself? enquires our gentle and considerate reader. Just for one or other of the many reasons which induced yourself to do so—for we know you write—retorts the author. Pleasure, pride, poverty, happiness, hunger, anger, disdain, contempt, candour, fear, love, hatred, hope, knowledge, malice, misery, dissimulation, philanthropy, philoprogenitiveness, conceit, arrogance, ignorance,—these are a few of the many fertile sources from which the things called books,—"of the making of which there is no end,"—are ever flowing. We say it in shame, sorrow, and contrition,—we never yet met a man who had not written one or more books, and do not expect ever to meet with so perfect a human being on this side the grave. We once for a few brief hours in early life, deemed that we had done so, even on this "dim spot" which men call earth. We were returning about twenty years ago by the Carlisle mail from Clovenford, after a toilsome, but delightful and productive day in Tweed's crystalline streams. The evening had closed with many a murky frown, the night was dark and boisterous, and in the course of our homeward journey we could scarcely distinguish by the "ineffectual fire" of Ostler's lantern, as it flickered on the trickling rain-bespattered windows, a bulky fellow-traveller, who kindly talked to us alternately of trouts and trees, and withal in such a racy natural way, that we rubbed our hands with joy, and cried internally *eureka*, here *is* a man who never wrote a book. Our impression on this point grew stronger and stronger each succeeding mile, and when at length reaching

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[*] *Never!* P. D.

"our own romantic town," we sprung out beneath the glare of lamps upon the glistening pavement, quite delighted by the novelty of our previous situation, and holding up our arm to aid the descent of our unlettered friend,—Reader,—it was Sir Walter Scott!

We here present a few fishing lines spun by that ingenious angler, Mr. Thomas Tod Stoddart. They relate to a branch of the subject on which we dare not enter, except "in numerous verse," as no man could withstand the accusation of being both a proser and a poacher.

THE LEISTER SONG.

Flashes the blood-red gleam
 Over the midnight slaughter,
Wild shadows haunt the stream,
 Dark forms glance o'er the water.
It is the Leisterer's cry!
 A Salmon, ho! oho!
In scales of light, the creature bright,
 Is glimmering below.

Murmurs the low cascade,
 The tall trees stand so saintly,
Under their quiet shade
 The river whispers faintly.
It is the Leisterer's cry!
 The Salmon, ho! oho!
A shining path the water hath
 Behind the shape of snow.

Glances the shining spear,
 From harmless hands unheeded;
On, in its swift career,
 The dream-like fish hath speeded.

It is the Leisterer's cry!
The Salmon, ho! oho!
Along its wake the torches break,
And waver to and fro.

Wildly the eager band
Closes its fatal numbers:
Across its glistering sand
The wizard water slumbers.
It is the Leisterer's cry!
The Salmon, ho! oho!
And lightening like, the white prongs strike
The jaded fish below.

Rises the cheering shout,
Over the rapid slaughter;
The gleaming torches flout
The old oak shadow'd water.
It is the Leisterer's cry!
The Salmon, ho! oho!
Calmly it lies, and gasps, and dies
Upon the moss bank low.

THE BULL-TROUT.*

This is another great migratory species, well known in many of our larger rivers, but not so easy to identify with any of the continental kinds. It is thicker in proportion to its length than the salmon, the fins are more muscular, especially the tail, and the latter organ is square, or even slightly convex, or rounded terminally, instead of being forked or semi-lunar, as in so many fishes. The terminal portions of the pectoral fins are also rather of a dusky hue, than of that more decided blackish tint, which characterizes those parts in true salmon. The head is proportionally larger than that of the salmon; the teeth are longer and stronger, and the inferior posterior angle of the opercular cover more elongated backwards. The general colour is a greenish grey above, the lower parts silvery white; the body above the lateral line being thickly covered with large cruciform black spots. The flesh of this species is of a yellowish tint, and has a coarse flavour, except in the young state. It is consequently less esteemed, as a marketable commodity, than any other of the sea-going kinds. In the breeding season it assumes a much blacker tint than the salmon, and wants much of the red markings. All the under parts, jaws, and cheeks, become blotched with deep blackish gray. The hook of the under jaw of the male does not assume so elongated a form as that of the salmon. The old fish begin to enter the rivers about the end of July, and are believed to deposit their spawn and return to the sea about a month earlier than the last named species.

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* *Salmo eriox.* Linn. Yar.

This is a very powerful fish in all its states, and feeds voraciously without much discrimination. Sir William Jardine informs us, that when hooked it springs repeatedly out of the water, and runs—to use an angler's phrase—with extraordinary vigour to free itself from barb and line. The river Tweed and its tributaries are among the principal localities of the bull-trout, although it occurs occasionally in the Solway, and in the rivers of the west and north of Scotland. It weighs in the adult state from 15 to 25 pounds. The last we saw was killed by netting near Peebles, and weighed upwards of 17 pounds.

Such British authors as have applied the continental name of *Salmo hucho* to any native species, have no doubt intended by so doing to designate (however erroneously) the fish in question.

The Bull-trout, in the adult state, is characteristically called the *Round-tail* in the river Annan, and —in common, however, with those of other species —its young are there and elsewhere named *Sea-trout*. The Warkworth and Coquet trout of Durham and Northumberland are the young of this species, as are likewise the *Whitlings* of the Tweed, or *Berwick Trout* of the London markets. But the whitlings of all our Scotch rivers are not necessarily the young of the Bull-trout, in as far as provincial names are sometimes differently applied. We have no doubt, however, that the Norway salmon of our Sutherlandshire, and other northern fisheries, is identical with the Bull-trout, that is, with *Salmo eriox*, in the adult state, although some regard that fish as a variety of the common *Salmo salar*. According to Dr. Parnell, the young of the Bull-trout, when about nine inches in length, has the tail still acutely forked; but he observes, that when the fish attains the length of twenty inches, the middle ray of the tail is more than half the extent of the longest ray of that organ, whereas the same ray in the salmon is never half as long as the most lengthened caudal ray at any age whatever. This ingenious author has carefully described the numerous varieties of the Bull-trout in his excellent paper "On the Fishes of the Firth of Forth."*

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* *Memoirs of the Wernerian Natural History Society*, vol. vii.

The mode of angling for this great migratory trout is the same as that pursued for salmon. In truth it is seldom killed in the adult state except by accident, while the angler is casting for that more prized species.

THE SALMON-TROUT.*

In a commercial and culinary point of view this is the most important species we possess, next to the salmon. It bears a closer resemblance to that fish than to the bull-trout in its general form and aspect, but its teeth are more numerous, both on the jaws, tongue, and vomer. The tail is not so much forked at the same age as that of the salmon, but it becomes square, as in that species, in the course of adolescence. According to Mr. Yarrell, the size and surface of the tail are also less than those of the salmon, owing to the comparative shortness of the caudal rays.

Many authors and anglers are of opinion that there are two kinds of salmon-trout (*Salmo trutta* and *albus* of Naturalists), and to these, in their various states, the names of sea-trout, white-trout, herling, whitling, phinock, &c. have been applied. The characters of each, however, have never been defined, and we agree with Sir William Jardine and Mr. Yarrell, that both should be merged in one, entitled to the name of *Salmo trutta.* These fish are very abundant in Scotland, and are taken in great quantities in the Solway and its tributaries, and in most of the rivers which debouche along the western and northern coasts of Scotland. In the first named locality they bear the names of sea-trout, herling, and whitling,—in the latter of white-trout, sea-trout, and finnock; and when transported to the larger market towns receive the additional name of salmon-trout. Thus we may easily conceive the great and almost irremediable confusion which may take place, and has actually now arisen, from the use or abuse of these provincial names. The Fordwich trout of Izaak Walton, described as yielding "rare good meat," pertains to our present species.

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* *Salmo trutta*, Linn.—*Salmo albus*, Flem.?

On the south-east coast of Scotland and its rivers, this marine species appears to be less abundant than along our western shores. This may, however, possibly arise from the larger meshes of the netting there employed. The Edinburgh market is chiefly supplied from the estuaries of the Forth and Tay.

In its largest state, or as known under the specific appellation of *trutta*, the sea or salmon-trout begins to enter the rivers towards the end of May, with a weight varying from one to five or six pounds, according to the age of individuals. The form and dimensions are extremely elegant,—possessing all the symmetrical grace of the salmon. The head is small; the back extremely broad when viewed from above; the tail slightly forked, and wide at the extreme points; the general colour is above greenish, inclining to bluish-gray, the lower parts being of the clearest silvery-white; and above the lateral line the body is spotted, as in the bull-trout, with large deep-black spots, but fewer in number. The flesh is pink, of high and delicate flavour, and much esteemed for the table. In this respect it ranks next to the salmon,—and by some is even more esteemed than that princely species.

In its smaller or younger state (*S. albus?*) it presents very nearly the same appearance in respect to proportion, form, and colour. It approaches the mouths of rivers towards the end of July, and immediately enters the fresh waters, often in immense profusion,—so that an angler may capture almost any quantity without the exercise of great skill. Sir William Jardine regards them as even "annoying from their quantity" when the angler is casting for salmon. We cannot say we ever felt the annoyance greatly, although with a friend we have sometimes killed above seventy in a few hours, in addition to a salmon or two, and several gilse. In some of our northern counties they are not commercially accounted for by their hired captors, that is, they are regarded as among the perquisites of the *hayners* or taxmen of the salmon fisheries,—surely a regardless and ill-advised regulation, seeing that from 500 to 1000 are sometimes taken at a single hawl of the sweep-net. They are also taken in equal numbers in the Solway in houses of the stake nets, covered for the purpose with a mesh of smaller size than usual, and are afterwards carried off in cart loads to the country markets. The flesh of this smaller fish is also of a pink colour and delicately flavoured.

The external colour of sea-trout, during the spawning season, is a changeable grayish-black, slightly tinted in the males with brown; and at this period they offer a most marked contrast in their lank and darkened forms, to the symmetrical shape and stainless silvery lustre of their earlier condition. Their flesh, too, becomes white and insipid, and the whole fish assumes an unwholesome aspect. Yet it is in this condition, as Dr. Parnell has observed, that while returning to the sea, in the months of January and February, numbers are taken in the Forth above Stirling, as well as in the Tay, and sent to the Edinburgh market, where, under the name of *Lammasmen*, they are sold at the rate of about sevenpence per pound. The largest specimen of the salmon-trout which has come to our knowledge is that mentioned by Mr. Yarrell. It was a female in fine condition, in the possession of Mr. Groves of Bond Street (noted in June 1831), and weighed seventeen pounds.

An obscure cloud, till lately, overhung the history of this migratory species, although, reasoning from analogy, we doubted not that its life and conversation would be found to correspond in most particulars with those of the salmon. It now appears that Mr. Shaw's original discovery of the slow growth of salmon fry in fresh water applies equally to sea-trout. The same principle has been found to regulate the growth and migrations of both. On the 1st of November 1839, our ingenious observer placed impregnated sea-trout spawn in his experimental ponds. By the fortieth day the embryo fish were visible to the naked eye, and on the 14th day of January, seventy-five days after deposition, the fry were excluded from the egg. In two months they were an inch long, and had assumed the bars or lateral markings, so characteristic of the young of the Salmonidæ. When nine months old, in the month of October, they measured only three inches in length, and during winter they scarcely grew at all. In October of the second year, that is when they were twenty-one months old, they had attained the length of six inches, and having lost the lateral bars, they greatly resembled the young of certain varieties of the common river trout. In the ensuing month of May, being now above two years old, and about seven inches long, three-fourths of the brood assumed the clear silvery lustre which characterises the migratory state, being thus converted into smolts, resembling those of salmon in their general aspect, though distinguished by the orange tips of the pectorals and other characters.

With a view to the further prosecution of the subject, Mr. Shaw next turned his attention to the corresponding condition of the fry in their natural places in the river. Of these un-prisoned sea-trout smolts he captured a considerable number on the 9th of May, while they were descending sea-wards, by admitting them into his salmon cruive. He then marked ninety of them by cutting off the whole of the adipose fin, and three-fourths of the dorsal. Considering that he was twenty-five miles from the sea, windings included, and bearing in mind all the mischances which the life of a fish is heir to, he entertained no sanguine hope of seeing many of his young friends again. On the 16th of July, however, just eighty days afterwards, he recaptured an individual bearing his undoubted marks. It was now a *herling*, weighing ten ounces, and measuring a foot in length. It is in this condition that young sea-trout ascend many of our rivers in great abundance in July and August. On the month of August of the ensuing year, fifteen months after being marked as fry while descending to the sea, he captured another individual, also recognisable by the absence of one fin, and the mutilation of another. It now weighed two pounds and a-half, and may be regarded as representing the average size of the species on its second migration from the sea.

It thus appears that the young of sea-trout, like those of salmon, remain for a couple of years in fresh water, and after enjoying the advantage of sea-bathing for several weeks, it may be two or three months, return as herlings to their native river. As these herlings (or finnocks as they are elsewhere called,) abounded in the Nith in the summer of 1834, Mr. Shaw took occasion to mark above 500 by cutting off the adipose fin. During the ensuing summer (1835) he recaptured 68 as sea-trout, weighing on an average about 2½ pounds. On these he inflicted a second mark, by removing a piece of the dorsal fin; and on the summer after (1836) he caught a portion of them, about one in twenty, with an average weight of about four pounds. "I now," says Mr. Shaw, "marked them distinctively for the third time, and once more returned them to the river, also for the third time. On the following season (23d day of August, 1837,) I recaptured the individual now exhibited, for the fourth time. It then weighed six pounds."* This fish, the adventurous leader of the forlorn hope, must have been then in its sixth year, and probably represents the completed condition of the species. They occasionally attain, however, to a still greater size, although it may be inferred that the majority of very large sea-trout belong rather to the preceding species (*S. eriox*) than to *Salmo trutta.*

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* The specimen alluded to is now preserved in the Museum of

These views and observations account, we think, in a reasonable way, for a fact well known to anglers of sea-trout along our western coasts and islands, and which has puzzled many thoughtful inquirers: viz. that in spring and early summer the prevailing sea-trout are of larger size than the numerous hordes which seek to enter our river waters during the midsummer season, which would not be the case if they were all fish of the same year. But the former are the herlings of the preceding year, which have descended, after spawning early, to the sea, and returned as sea-trout, with a large increase; the latter were nothing more than smolts in May, and have only once enjoyed the benefit of sea-bathing. They are a year younger than the others, and have, consequently, a good right to be of smaller size. It will thus be seen that a herling bears the same relation to an adult sea-trout as does a grilse to a grown salmon.* Although large sea trout are found in spring, the largest of all are got in autumn floods when they ascend to spawn. Many *Sogdollagers* (as the

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the Royal Society of Edinburgh, and Mr. Shaw's paper "On the Growth and Migration of the Sea-trout of the Solway," is published in the *Transactions* of that learned body, vol. xv. Part iii.

* On the subject of sea-trout and salmon the curious reader may consult two recent papers in *Blackwood's Magazine*, Nos. cccxxxi–iii.

Americans might call them) are then to be met with both in lakes and rivers. In the island of Harris, for example, we found the lochs full of magnificent sea-trout in August, and with the aid of a friend killed 223 pound weight in a few days, not exclusively devoted to angling. The heaviest pair weighed 12 lbs., and ran like grilse. But the consideration of these insular lochs would require (as they deserve) a separate treatise.

So far, then, as we can at present perceive, we think that there are nourished in the streams, rivers, estuaries, and ocean waters, of this our blessed country, three distinct species of migratory or anadromous salmonidæ,—viz. the salmon (*Salmo salar*), the bull-trout (*Salmo eriox*), and the salmon-trout (*Salmo trutta*),—of all of which the young are frequently confounded with each other. We think that the adolescent salmon will be found distinguished by a decided tendency to blackness on the terminal portion of its pectoral fins,—that the youthful bull-trout will be recognised by the duller dusky hue of that same portion, while the aspiring sea-trout, when in proper order, will be naturally characterised by pectorals of a warmer Claude-Lorraine-like hue.

All these migratory species are distinguished after a certain period, when in good condition, from such as inhabit the fresh waters only, by the clear but deep greenish or greyish blue of the upper surface of their bodies, and the brilliant silvery white of the under portions. The more minute or macular markings can scarcely be insisted on, because our finny friends, though they resemble leopards in activity, differ from these fair creatures in this,—that they can change their spots.

We used the freedom to ask the enthusiastic angler sometime ago if he were fast asleep. We regret to say that we have since ascertained the fact of his having been so ever since we named the name of *Parr*,—which, however, so far from being a watchword in our own family, is rather an assured signal for somnolescence, and therefore we in no way take amiss, that a respected stranger should gently repose himself over a subject, which we have seen so often veil in dim suffusion far brighter eyes than his. Not that we mean to say there is anything defective in his vision, quite the reverse, for we rather like odd looking eyes,—but are simply desirous to mention that we forgive his yielding thus to nature's "soft restorer." He may now uplift his lids, and look about him for a moment.

When an angler finds himself standing a few hundred yards, or it may be even several miles, from the mouth of a beautiful and sparkling river,—haply not on golden sands, nor yet on grassy bank, but half way up between the knees and haunches in the water, —when every other cast of his far stretching gossamer causes a sudden "bright uprising" into the sunny air of some quick springing fish, with deep cerulean back, and breast like that of Leper "white as snow,"—what matters it to him by what specific name it once was known to Ray, Artedi, Pennant, or Linnæus? It is a sea trout, and let him thank his stars, and think no more of *albus* or of *trutta*. It may weigh only three quarters of a pound, or it may weigh a pound and a-half, or two pounds,—seldom any less and still more seldom more,—but if he kills a couple of dozen, let him therewith be content, for better anglers, many a time and oft, have fished farther and fared worse. Large and rather gaudy flies, dressed much upon the same principle as those used for salmon, but of smaller size, are best adapted for the capture of sea-trout. A mallard wing, with red hackle, a twist of gold, and an orange tuft at the tail will be found very toothy. So also will a large Green Mantle or a red or yellow Professor of considerable size, and rather roughly hackled.[*] A salmon fly already described (see Plate II. fig. 6), when somewhat reduced in size and fulness, is greatly to their taste. The same indeed may be said of fig. 3, Plate I.

THE COMMON TROUT.[†]

This beautiful and well-known fish is very generally distributed over the whole of the northern and temperate parts of Europe,—being found in every burn and tarn, in every lake and river. It may also be described as one of the most pleasing in its external aspect,—for when newly drawn in "golden glory" from some translucent stream, it is a creature of exquisite beauty. The more is the pity it should so often fall a prey to the insidious arts of all-engrossing man. The variation of its tints, according to season and locality, is so great and multiform, that we need not here seek to make these colours known,—their general character being no doubt already familiar to all our readers.

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[*] We distinctly hear one of our readers somewhat angrily exclaiming, that we now refer to flies, possibly invented by ourself or family, of which he knows nothing, and which we have not yet described. "We own the soft impeachment," but let him just wait patiently,—patience is an angler's virtue,—and we shall satisfy him in a few minutes.

[†] *Salmo fario*, Linn.

This species varies greatly in size as well as colour,—in accordance probably with the nature and abundance of its food, the strength and depth of the river in which it occurs, and the physical properties of soil and climate. Fish indeed seem, more than most animals, to depend on peculiar and unappreciable circumstances for the full and characteristic development of their attributes; and they consequently exhibit great contrariety of aspect among individuals of the same species. If a canal or reservoir, or any other great accumulation of water, is formed by the hand of man, where the hand of nature had from time immemorial recognised only some small and solitary streamlet, the lapse of a very few years produces large and heavy fish, where none but trouts of the most trifling size had ever been seen before. The writer of these observations kept a minnow little more than half an inch long in a glass tumbler for a period of two years, during which time there was no perceptible increase in its dimensions. Had it continued in its native stream, subjected to the fattening influence of a continuous flow of water, and a consequent increase in the quantity and variety of its food, its cubic dimensions would probably have been 20 times greater; yet it must have attained, prior to the lapse of a couple of years, to the usual period of the adult state. In regard to birds and quadrupeds, the individuals of the same species are seldom distinguishable from each other by any peculiarities either of form or colour, at least within the limits of a restricted locality; but it appears to be otherwise with several species of fish, more especially trouts. Those of the Clyde and Tweed, although both rivers draw their primary sources almost from the same mountain, present a constant and well-marked difference in their external aspect; and a corresponding dissimilarity exists among the characteristic varieties of almost every river and lake in Scotland; "which I tell you," says Walton, "that you may the better believe that I am certain, if I catch a trout in one meadow he shall be white and faint, and very like to be lousy; and as certainly, if I catch a trout in the next meadow, he shall be strong, and red and lusty, and much better meat. Trust me, scholar, I have caught many a trout in a particular meadow, that the very shape and the enamelled colour of him hath been such as hath joyed me to look on him: and I have then with much pleasure concluded with Solomon, 'Every thing is beautiful in his season.'"

One main cause of dissimilarity in the external character and aspect of different trouts, is undoubtedly the variation of their food; and it seems certain that such as feed on shells and *Gammarinæ* (screws, or fresh water shrimps, as they are sometimes called), are of the most beautiful tints, the finest flavour, and possess the most decided pinkness in their flesh. Of these the Devock-water trouts of Westmoreland, are among the best we have either caught or cooked, although several other lakes in the north of England produce trout of such fine quality that they are not seldom passed off upon the uninitiated as charr. Our own Loch Leven, too,—of which the barren isle, and now dismantled castle, are famous in history as the prison place of the beautiful Queen Mary,—has long been noted for its breed of trouts.* These, however, were said to have deteriorated considerably sometime ago in their general flavour and condition, owing, it is reported, to the partial drainage of the Loch having destroyed their best feeding ground, by exposing to the destructive influence of the atmosphere those rich and numerous beds of small aquatic shells, which formed the principal portion of their food.

Further north, as in Sutherlandshire, the immense multitudes of lochs produce a corresponding abundance and variety of trout. Of these, however, only a few are of very superior quality,—but these few may assuredly vie with those of any country in the world. We may mention more particularly Loch Craggie, near Lairg, as full of fine trout. They seem, however, shy, except in spring and early summer. We first fished it with a friend in July, and were sadly disappointed by killing on an average only one and a half each, that is three between us per diem; but during another trip in the first week of June, each rod captured about a couple of dozen a day of the finest fish, weighing from three quarters of a pound to a pound and a half and two pounds a-piece. Only one weighed two pounds and a half. This Loch Craggie rests in a granitic basin. Its waters are extremely clear, though here and there we observed beds of Potamogeton in deepish places. The greater part of the north side is covered by rocks and stones, among which large fish lie. All the *natives* here are strong active creatures, with well formed smallish heads, and something of a salmon like aspect. Sir William Jardine tried them by trolling with a small trout as bait, but had only a single run. Yet we had proof on dissection of their piscivorous propensities,—several having the remains of small fishes in their interior. *De* gutsibus *non disputandum est.* In Loch Doulay, a little lower down, and somewhat nearer Lairg, we killed a beautiful trout in the evening, during a dead calm, which —we mean the fish—weighed three pounds. It was brilliantly coloured, finely shaped, exquisitely conditioned—how it simmered soon after sunset!—and altogether formed the most perfect picture of a trout we ever saw. As our pannier was already full, we laid it down on one of those little grassy basket-looking tufts of green, so often found—like islands in Oasis—to beautify the gravelly shores of desolate mountain lochs, and proceeded on our way rejoicing. Returning ere long with half a dozen more—but none so fine—we perceived our travelling companion—our much loved fishing friend—lying on that lone shore to all appearance *dead!* We were rather shocked at this upon the whole, knowing that he had left a wife and family, but on a near approach, we found that he was neither dead nor sleeping, but entranced—"awed, delighted, and amazed,"—by our glorious three pounder, and had laid himself down enamoured to gaze upon her beauties. We ate her, however, that same night to supper. The bottom of Loch Doulay is in some places soft and mossy, and on one side there is a deep marsh, bordered next the water by a regiment of reeds, and sheltering numerous gulls, grebes, and other water-fowl. Its fish, in general, are somewhat inferior to those of the clearer waters of Loch Craggie.

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* We recently discovered trouts closely resembling, if not identical with, the far-famed variety of Loch Leven, in a small fresh water lake in Barra, one of the outer Hebrides. It is named Loch Tangestal, and is situate near the southern extremity of the Island, a little inwards from Kishmul or Castle Bay.—See *Voyage round the Coasts of Scotland and the Isles*, vol. i. p. 477.

In another neighbouring piece of water (Loch-tà-Craig),—we beg its pardon if we cannot spell aright, we had a shocking bad pen when we wrote our notes,—the trout are still more inferior both in size and condition. Its waters are dark and mossy, and the bottom is in many places covered with mud. Loch Bearnoch, in the same vicinity, is reported to contain fish of four pounds. We put them to the test act—a green mantle and red professor—but they were non-conformists, rose rather sulkily, and none exceeded a pound and a half. Though not so fine as the *Loch Craggies*, they are fair fish to look upon, and of great strength for their size. The spots on some specimens were large and black. The bottom of this Loch is extremely stony, and for the most part not more than two or three feet deep for a distance of twenty or thirty yards from the shore. The surrounding rocks, like those of Lochs Craggie, Doulay, and ta-Craig, are granitic, but the waters of the first are by far the most translucent. This Loch Bearnoch is a small and solitary water—a wild and dreary spot; but the distant view of the great mountain of Ben-y-Clibrich bestows upon it a character of desolate grandeur. Wild geese breed upon its islands.

We must allude to still another loch in Sutherland, called Loch Mallocherie, on the Benmore range, above Inch-in-damff, which is also remarkable for its trout. These are of a rather reserved disposition, at least are somewhat shy of the artificial fly, —and indeed till Dr. Greville and ourselves tried them in the summer of 1833, they had not been known to rise to that lure,—but take pretty well by trolling, and range in weight from three-fourths of a pound to two and a half or three pounds. They are beautifully, but not brilliantly coloured—at least we did not find them so in either June or July—but are very thick and finely formed, and so remarkably fat, as almost to fall of their own accord from the frying-pan into the fire. They are about the best eating trout we have yet met with here below. We noticed that the lake, which is high among the hills, abounded with the aforesaid *Gammarinæ*,—screws or fresh water shrimps. But as we intend to write a separate work one of these days on the culinary character of the different kinds or varieties of trouts in Scotland, we shall here say nothing more on this department of our subject.*

The characteristic habits of trouts, their usual haunts, their favourite feeding grounds, their chosen resting-places, cannot be described by human pen, so infinite is the variety of circumstances by which they are surrounded. Could any man detail these haunts and habits amply and accurately, his work would be the best and greatest of cosmographies, Malte Brun and Balbi would "babble of green fields" no more for ever, and the "Angler's Guide" would depict the universal world,—for what portion of the habitable globe worth speaking of, does not abound in fertile flowing rivers, or, in the form of broad expanded lakes, spreads not its glittering bosom to the sun? Why does the "teeming West," year after year, through trackless woods or over vast savannahs, admit of such increase of man's dominion? Why, in those far distant and once forlornest regions, does now the desert blossom as the rose, and boatman, builder, butcher, teacher, tailor, work busily, eat heartily, sleep soundly, and multiply rapidly? All owing to the sway of those most picturesque of agents, wood and water (but chiefly water), and their united power of aiding man in all his efforts, minute or mighty, from the boiling of a potatoe to the steaming of the British Queen. Why is so much of the nearer continent, the "arida nutrix leonum," so barren and unpeopled? Just for want, amid its desolate sands, of a certain fair proportion of translucent water, in which the dim-eyed camel, heavy laden, may cool his burning breath, or dusty pilgrim plunge with greater gladness than did ever miser into heaps of gold. As philanthropists upon a large scale, we do indeed rejoice in the announcement which lately appeared of a "Royal African Auxiliary Artesian Spring Company" (Capital £500,000,000), which, with judicious management in the details, will assuredly effect a great revolution in the social, moral, physical, political, and commercial condition, alike of tawny moor and woolly headed negro, and be of no disadvantage to the secretary of that same Association, whoever he may be.

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* We cordially agree with, and have great pleasure in recording —the more so as we had previously published the same facts ourselves,—the following observations of M. Agassiz on the colouring and food of fishes. "It is during the autumn, and at the time of the greatest cold, that is to say, in October, November, December, and January, that their tints are most brilliant, and the colours become more vivid by the accumulation of a great quantity of coloured pigments. We might almost say, that these fishes bedeck themselves in a nuptial garment as do birds. The colour of their flesh varies according to the nature of their aliment. This family of fishes feeds especially upon the larvæ of aquatic insects, and on small crustacea. It is in the waters which contain the most of these last that the most beautiful salmon-trout are found. Direct experiments, which were made in lakes, have proved to the author's satisfaction, that the intensity of the colour of the flesh arises from the greater or smaller quantity of *Gammarinæ* which they have devoured."—*Fourth Report of the British Association*, p. 620.

Our talk is now of waters, from dancing rill to slow and solemn stream,—

Not hurled precipitous from steep to steep,
Lingering no more 'mid flower-enamelled lands
And blooming thickets, nor by rocky bands
Held,—but in radiant progress toward the deep,
Where mightiest rivers into powerless sleep
Sink, and forget their nature.

So let us adorn and dignify our unpretending volume, by ever and anon inserting radiant gems by great artificers, and then the weary pannier-laden angler, who has haply surmounted some lofty barrier in search of mountain tarn, or the sweet waters of a neighbouring vale, unbuckling his finny burden, may seat himself complacently amid the storm-swept herbage, and gaze around, awe-struck, but yet with grateful and rejoicing heart, on all the "dread magnificence" which there surrounds him. When he has drawn his breath a little, let him read the following lines. *

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* We know not what degree of plagiaristic immorality we commit in thus pilfering entire poems from any writer whatsoever, but, so far as concerns the case in question, we try to hold ourselves excused alike to author and publisher, by the fact of our having purchased for ourself or friends five copies of the latest collected edition of Wordsworth's works within the last two years, besides having previously procured (by honest payment) three former English editions, and a Parisian one by Galignani (this last a present from J. D. F.) in a single volume. We have thus, including a few spare copies of the "Excursion" (one in 4to. and two in small 8vo.), and of "Yarrow revisited, and other Poems," which we caught up before they were collected, possessed ourselves (or benignly rendered others the glad possessors), of about 44 volumes of Wordsworth's poetry. Therefore, in thus drawing from "other orbs" our golden light, we hope not to offend. Indeed, we never heard of the God of Day complaining that—

"The moon doth with delight,
Look round her when the heavens are bare."

TO * * * * * *,

On her first Ascent to the Summit of Helvellyn.

Inmate of a mountain dwelling,
Thou hast clomb aloft, and gazed,
From the watch-towers of Helvellyn,
Awed, delighted, and amazed!

Potent was the spell that bound thee,
Not unwilling to obey,
For blue Ether's arms flung round thee,
Stilled the pantings of dismay.

Lo! the dwindled woods and meadows!
What a vast abyss is there!
Lo! the clouds, the solemn shadows,
And the glistenings,—heavenly fair!

And a record of commotion
Which a thousand ridges yield;
Ridge, and gulf, and distant ocean,
Gleaming like a silver shield!

Take thy flight! possess, inherit
Alps or Andes—they are thine!
With the morning's roseate spirit,
Sweep their length of snowy line:

Or survey the bright dominions
In the gorgeous colours drest,
Flung from off the purple pinions,
Evening spreads throughout the west!

And yet, who doubts that she, in common with ourselves, must ever shine only by borrowed lustre? We therefore hope, that we, the "inferior creatures," may shelter ourselves unblamed beneath "Rydalian Laurels,"—stealing from "Poesy," (a word we like not well,) a borrowed tongue,—

> "To cheer the itinerant on whom she pours
> Her spirit, while he crosses lonely moors,
> Or, musing, sits forsaken lochs along."

Thine are all the choral fountains
Warbling in each sparry vault,
Of the untrodden lunar mountains;
Listen to their songs! or halt,

To Niphate's top invited,
Whither spiteful Satan steered;
Or descend where the ark alighted,
When the green earth re-appeared;

For the power of hills is on thee,
As was witnessed through thine eye;
Then, when old Helvellyn won thee,
To confess their majesty!

But let us descend again to the low countries, and take a nearer and more detailed view of certain branches of our subject.

In regard to the size to which the common trout attains, we think that "the constants of nature" have been in no way ascertained, so far as this species is concerned. A weight ranging from a few ounces to about a pound, includes the great majority of those found in the generality of rivers. Many lakes swarm with small trout, but usually the average size in lakes exceeds that of rivers. A river trout of a pound weight is a goodly fish, one of two pounds a very fine one, of three pounds extremely rare. Yet there are many recorded cases of river-trout weighing eight, ten, twelve, fifteen, twenty, even twenty-five pounds weight; but we have little doubt that bull-trout of these dimensions have not seldom been mistaken for the genuine fresh water species.

We do not here desire to dwell upon that painful portion of the character of certain anglers—of whom the present reader is not one—which induces them to magnify their captures both in size and number. We have met with many men who never killed a trout under a pound weight, even by accident, and who never angle for an hour or two before breakfast or after lunch—this is their easy tooth-pick way of talking,—without luring to destruction several dozens. We know that we dined lately in company—a person can't always choose his friend's companions,—with one of these same boasters, who told the frequent tale of weight and number. Of the latter, we were somewhat careless, but curious exceedingly about the former, because, for a special purpose, we were anxious to obtain that very night a well-sized trout. We asked if he had brought his finny captures home beneath the roof where we were then rejoicing?—the answer, "to be sure." Feeling ourselves at ease, and receiving an approving nod from our hospitable host—himself a single-minded man, as full of truth as two eggs,—we rang the bell, and desired an agreeable looking footman to pick from the different panniers a few of the largest trouts which had been captured during that blessed day. He speedily returned, bearing a splendid assiette of China's purest clay,—our friend is rather proud of his eastern ware, and his old housekeeper, knows that failing well,—with slant-eyed Mandarins, their pipe in hand, small footed damsels, drinking from cups that cheer but not inebriate, bridges high in air, and swallows and summer-houses mingling together in the clouds; but for the "take of trouts," Oh! what a falling off was there, my countrymen! Where were the couple-of-pounders now? There were a few of three-quarters of a pound (and pretty fish these same) ascertained, however, by a red thread through their gills, to have been caught by a highly respectable and very round-faced clergyman of the Episcopal persuasion, who—silent though not unseen—was sipping some light summer tipple, and holding the long slender stalk of a rather large yet delicate thin-edged glass so neatly in his small white hand, that we had known for several hours he was an angler, —thus proving how a naturalist, by the observance of a seemingly unimportant attribute of the outer-man, may throw a flood of light upon his prevailing character and disposition. It did not appear, however, that the braggart himself could identify with certainty a single parr, of which a few had been slily placed upon the platter by some observant valet down below, probably as a *memento* to him whose bark had been so much more powerful than his barb. Now, we give him due warning, that if he does not mend his manners, restrict his imagination, and study the specific weight, dimensions, and amount, of the few small fishes he may chance to capture, we shall publish his name in the Gazette, with no delay and less remorse, as an ensample to all who cast a stain upon our innocent craft, by having thus—

> "Forgone the home delight of constant truth,
> And clear and open soul, so prized in fearless youth."

The largest trout are usually killed by trolling or spinning with parr, or minnow, and it is a matter of great science to raise and hook, and of equal skill to "play" and complete the capture, of one of these giant fishes. We never ourself had the good fortune to slay a very large fresh water trout of the common kind, but we certainly think that those of lakes and rivers are stronger and more tenacious of life when under the angler's hands, than sea-trout of the same dimensions. The feelings of these two beings, when hooked, differ somewhat in the same degree as did those of Wellington and Napoleon at the battle of Waterloo. A gentleman (?) having stated his belief that the Duke was " surprised" on that momentous occasion, Professor Wilson (the author of fly first, p. 231), replied with his accustomed readiness, that the Duke might indeed have been " surprised," but assuredly Napoleon was " *astonished.*" So it is with the subjects of our present somewhat discursive exposition. A sea-trout, when first he feels the barb, is so exceedingly astonished, that he flings himself repeatedly head foremost into the air, and flounders about upon or near the surface of the water, in a most lively versatile manner (as the delighted angler deems), but then he soon succumbs to fate, and after a few more impetuous bounds, and fine vivacious unsuccessful splashes, a well sized fish may very speedily be drawn to land. But your river trout, even your simple two-pounder, though much *surprised*, is also greatly enraged, and will make repeated runs in every direction rather than run ashore; he will take perhaps a single spring or so, as if to ascertain exactly what has happened; he will dig his way towards " the bottom of the nether world;" he will try the diagonal dimensions of a deep and sombre pool; he will go helter skelter down a rocky rapid ; he will run continuously along a lengthened smooth expanse, and make a mighty flourish with his tail at the end of it; he will seek to hide himself (and break the line even of the imperial guard) among the tangled roots of old fantastic trees, or sneak beneath the gloomy overhanging banks, like a "demm'd demp disagreeable body" ashamed of being seen. It may easily be conceived that with this pertinacity and determination of character, the capture of a large river-trout is by no means easy, and it often happens, that in spite of all the angler's art, the said trout is seen waddling away with his tongue in one cheek and the fly in the other, while the line, like a "knotless thread," comes sneaking back towards its master, who takes off his hat, not so much to salute the departing fish, as to make room for the sudden elongation of his own ears, which are sure to assert their prerogative on such occasions. But let him replace his beaver and not despond, nor utter a single hasty or discordant word,—rather remembering the advice of old Markham, already quoted, "with pleased sufferance to amend errors, and think mischances instructions to better carefulness."

The form of a fine trout, when in high condition, is extremely elegant,—the head, however, being sometimes slightly large in proportion to the rest of the body, when viewed in relation to what we ourselves regard as the *beau ideal* of a perfect fish. In this respect, perhaps, the new run salmon, majestically clothed in purple and silver sheen, is the king of beauty, presenting as he does (the Apollo Belvidere of fishes) a picture so complete of energy and grace combined. The fins of a trout are of moderate strength, and always coloured, that is, never of the transparent paleness observable in certain migratory species, and the tints of these parts are usually of a lighter shade than those of the other portions of the body; the anal fin is frequently bordered on its lower surface with white; the tail is almost always forked; the scaling is proportionally less than among the migratory kinds; the teeth are generally strong, and very prominent both on tongue and vomer.

Some curious observations have been made both by naturalists and anglers, on the sudden or almost instantaneous alteration effected in the colouring of fishes, simply by a change in their position, as they pass from a lighter to a darker ground, or *vice versa.* Dr. Stark found, in relation to fishes in confinement, that when minnows were placed in a dark vessel, their colours become assimilated to that of the vessel, and that when transferred to a white basin they "uniformly became in a very short period of a light sandy colour, and their characteristic markings disappeared." He repeated the same experiments with a stickleback, of which the changes of colour were "still more remarkable than those of the minnow, in as much as they took place much more rapidly; and even in a few minutes, and under the eye, the colours may be seen to fade or brighten according to the nature of the vessel they are placed in for a time. The fine vermilion colour of the breast almost disappears when placed in a white basin; and the vivid colours are as speedily recovered upon transferring the animals to a black glazed earthen jar."*

Mr. Shaw, also, without any knowledge of the preceding experiments, had occasion to observe in the course of his visits to his ponds, that when his little fishes remained stationary in any part of their enclosure, their hue always corresponded to the colour of the bottom of that particular portion, and that whenever they moved to another quarter, where the ground was somewhat different in tint, they underwent after a few minutes a corresponding change. Wishing to determine this fact by experiment, he procured two large earthen-ware basins, one nearly white inside, the other nearly black. "I then placed a living fish in each, while at the same time I kept up a constant supply of fresh water in them. The fishes were of their natural colour when first placed in the basin; but they had not remained there more than four minutes till each had gradually assumed a colour nearly approaching to that of the respective basins in which they were placed. I next took the fish out of the white basin and placed it in the black one, and the fish which was in the black basin I placed in the white, and the results were uniformly the same,—the fishes changing according to the colour of the surface over which they are placed. I next placed both fishes in one basin, when the contrast for a short time was exceedingly striking. With the view of ascertaining what effect the light had in producing this extraordinary change, I next allowed the fish to remain in the white basin so long as effectually to acquire the light tint, when I excluded the light from them altogether by covering the basin with a thick mat, and on removing it a few minutes afterwards, I found the fish were again changed to a dark colour, which gradually disappeared on exposure to the light. The change of colour is produced alike under a bright or cloudy sky. This singular phenomenon, with which I have only now become acquainted, adds another to the many beautiful provisions Nature has made for the safety and protection of her creatures. The cause, however, is a·problem I make no pretensions to solve."*

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* *Edinburgh New Philosophical Journal*, vol. ix. p. 327.

We think that this principle of change accounts in some measure for the different aspect of fishes in different rivers, as well as in various parts of the same river. The Tweed, the Tay, the Dee, the Don, the Annan, although composed of many varied features, have each a character of their own, which becomes impressed on the external aspect of their finny inhabitants. Experienced fishermen tell you that they can distinguish the salmon of one river from those of another, that is, that they have taken cognisance of the general aspect and physiognomy which distinguish the natives of each, and can thus point out such as have wandered from their natal streams, and entered, either from free will or the force of circumstances, into another to which they were unaccustomed. Each river having a character of its own in respect to rapidity of current, clearness of colour, and—which is nearly the same thing—the amount and nature of the substances which it holds in solution, that character may no doubt become impressed upon whatever living things repose within its bosom, and so enable your tarry-thumbed and heavy-booted boat-man to say, "Behold the Tiber!" when, thinking of Tay's refulgent waters, he sweeps his net by Roxburgh's ducal bowers, or lifts his accordant oars harmoniously along time-honouring Brisbane's fair well-fished domain.

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* *Edinburgh New Philosophical Journal* for January 1838.

We have already mentioned more than once, that the size of trouts, as a species, cannot be stated, so let every angler kill as many large ones as he can, and raise the average. They are said to attain to a great age. One kept in a dingy well in Dumbarton Castle,—a well, and a lack o' day!—dwelt there for twenty-eight years, it is said with no increase of size from a pound weight when first put in; and another was equally well off,—indeed better,—in an aqueous receptacle of the same nature, in Mr. Mossop's orchard near Broughton in Furness, where it lived for fifty-three years. In "a wild state," full grown trout of what we would call large size, may be said to range from two to five pound in weight. Beyond that size they are certainly extremely rare, although in stews and ponds they may be fed up to still greater dimensions. The Thames trout, of which we have ourselves no practical experience, seem most frequently to reach a great size. They are described as being short compared to their length, of great thickness, and extremely well flavoured. Two were taken some seasons back, the one of eleven, the other of fifteen pounds in weight.

The size and character of trouts depend much upon the general attributes of the waters they inhabit. Mr. Stoddart has put forth some very reasonable remarks on this department of our subject. He observes that rocky waters, of which the bottom is deprived of soil and gravel, or which has at best but a thin coating of the latter, do not abound in trout, for the sufficing reason that the appropriate food is there deficient. " In such waters, no doubt, there are often to be met with certain temporary adaptations for nourishing fish, as in the case of much wood overshadowing them, and thereby, during warm and summer months, raining down great store of tree flies; also, if fern or sweet thyme crowd the banks, small beetles and grasshoppers are bred, but these form altogether a provisional subsistence, withdrawn by the rigid hand of winter. The fact is proved by many examples; let us pitch, for instance, upon a known stream, after this sort. We take the Cae or Cona of Ossian, which runs through Glencoe into Lochleven, an arm of the sea in Argyllshire. A small loch or lake is its proper source, called thereabouts, in the Gaelic tongue, Treachten. After issuing from this, it proceeds with considerable rapidity over shelving masses of rock, itself pellucid as diamond, and formed in many places into the most enticing pools, which one would naturally imagine were the resort of large and well fed fish; on the contrary, however, a few tiny individuals are all that inhabit them."* Having explained the prejudicial nature of a rocky channel in relation to the growth of trout, Mr. Stoddart next refers to the effect of a slower stream and muddier bed in producing a great increase of size. Of this nature are many of the southern rivers of England, where fish are large, but by no means numerous. There are fewer places adapted for spawning beds, and Mr. S. thinks the fish themselves grow "fat and lazy." Then the absence of loose stones and gravel deprives the fry of their accustomed sheltering places, and thus exposes them to the indiscriminate voracity of cruel uncles.

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* *The Art of Angling, as practised in Scotland*, p. 2

On a general view of this branch of hydrography, it may be said that piscatorial streams are divisible into three principal classes,—unless the moor burn may be regarded as a fourth, in which, through waving broom, bent grass, or blooming heather, the angler often sees or thinks he sees, black inky forms darting beneath the banks, fearing the light as if their deeds were evil. N.B.—Although the regular inhabitants of these burns are weak, and their size contemptible, it often happens that towards the spawning season large-sized fish occur in tiny waters,—tenants at will, but regular "ten-pounders," which run up to cast their spawn on gravelly places. Of the three more regular haunts of trouts we have already alluded to the two extremes,—the clear and rocky, the suffused and muddy. It now remains to shew those grounds on which the intermediate class may justly claim precedence, and here we shall also follow the footsteps of the skilful and observant T. T. S.

"The Tweed," observes our ingenious *Scottish*

Angler, " comparing it with the other Scottish rivers, is by no means rapid. The Dee, the Spey, the Lochie, and many parts of the Tay and Clyde, proceed with greater swiftness, and, on the whole, are infinitely more broken and interrupted. Of all rivers, this quality belongs solely to it, namely, that it is from head to foot beautifully proportioned and justly meted out. There is an evenness and impartiality about it which distinguish no other stream,—its pools and shallows are harmoniously arranged.

" It murmurs and pauses, and murmurs again. Here we perceive no rocky shelves, no impertinent cataracts, saying to ascending fish, ' hitherto shalt thou come, and no farther: and here shall thy proud fins be stayed.' Nothing of the kind. Nor is there, on the other hand, any inert tendency; no long, dead, sleeping levels, in which pike may secure themselves. The whole is planned according to an angler's taste, every inch of water accessible to the wader, without danger or interruption. Its banks, also, are in keeping with its other advantages,—not naked and barren, neither spongy and overgrown with rushes, nor yet crowded with close and impervious wood, but mostly dry and inviting, fringed in many parts with oak, ash, elm, and beech, and in others hung over with the pleasant alder, among the roots of which is often harboured a goodly and well-grown trout, impatient for some dropping fly or incautious worm. Most to our favour, however, is its choice formation of bottom or channel, fertile in food, provided with shelter, and admirably fitted to the purpose of spawning. A medley it is of gravel and sand, interspersed with largeish stones, just capable of being removed by the hand. Now and then, it is true, these latter assume more considerable dimensions; nay, occasionally, a point of rock may be discovered, yet so judiciously arranged as not at all to cause prejudice to any one stream. Clay you seldom meet with, it is a barren unprofitable substance, impervious to every species of water animalculæ; we mean not by it, the muddy refuse which is often found even in Tweed, proceeding from vegetable decomposition, and not in the least unfavourable to the support of fish, but that hard yellowish till of which the agriculturist complains, as drawing off no moisture, and harbouring no nourishment.

"Another leading feature of the Tweed is, that its whole development is gradual, its extension almost imperceptible. It proceeds not—like the Tay or Lochie—from the womb of a large reservoir, supplied but scantily during its course, but commences in more modest and humble style, emergent from slender and silvery fountains, without show or vaunt, or any symbol of its progressive greatness. Yet anon it maketh considerable gains from surrounding hills, assuming a more dilated and goodly aspect; rivulet after rivulet adds to its breadth, as it widens up gently and unconsciously with the valley through which it flows; nor is each petty feeder without its use,—a nursery for the young fry, it annually sends forth, shoal on shoal, to disport among roomier waters in the leading stream. As it descends, these resources become larger, often contending for the precedence, and yet in nowise worthy of such distinction. The

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The general principles which regulate the practice of the angler's art, are here the same as those available in running waters. The flies, however, are usually of larger size; and as to the particular kinds, —a yellow professor with a warmish wing,—a reddish hackle with a deep coloured teal or mallard wing, and a twist or two of tinsel round the tail,—a green mantle with paler wing than the professor,—these three are like faith, hope, and charity to fishes. In angling from a boat, paddle your craft gently within a range of fifty or sixty yards from shore, and cast your line towards the land, fishing for that purpose rather along the lee-shore than the windward side, if local circumstances—such as the admitted superiority of one margin of a loch over another—do not render an opposite course advisable. And here, as in river fishing, consists the advantage of experience, not in the general principles alone of angling, but in its practice in relation to particular places. If the wind is blowing cheerfully, all that your boatman needs to do, is to keep his craft about the distance wanted, (see that he makes no splash, nor dashes high in air the billowy waters,) and you will drift along with sufficient celerity to afford you fresh casting ground every other minute. Try the vicinity of islands, promontories, and projecting points — skirt along sandy bays — persevere near wood-fringed rocky ranges—cast within a yard or two of large mystical Henge-stone looking stones—be sedulous but careful on the outskirts of weeds, reeds, and water lilies,—in short, fish every loch you meet with all over, and as well as you are able, except the central regions, which, though not unpeopled, are assuredly less productive than the shallower shores. But above all—especially towards evening, or, when

Waters on a starry night
Are beautiful and fair,

steal silently with muffled oar within a few yards of the trinkling mouth of every tiny rill which dances from the side of barren mountain, or creeps insidiously from shadowy wood,—for there your pounders —one lib., two lib., three lib.,—lie unseen, waving their pliant fins, and swallowing each innocent immergent thing which " enters the bosom of the quiet lake,"—and there you may raise and hook, and play them pleasantly, and deftly dip your landing-net beneath them, and then uplift them handsomely into your coracle, their strong curved sinewy tails essaying all in vain an upward spring from that same cunning soft reticulation, which yielding to the pressure from within, admits no more of any bright rebounding, and knows not in all its points a *point d'appui*. Now give him a sharp, but not a crashing tap upon the head with any little bit of stick about you, to " still his pantings of dismay," and prevent the probability of his jumping over the gunnel of the boat, and telling every fish he meets with " in coral cave, or clear translucent fountain," that you are an " abominable inhuman" *Anglus sed non Angelus,*— as the man in the south country said of Milton when he saw him sleeping.

N. B.—Remember that when angling from a boat, and after hooking, reeling in, and being about to lift upwards a goodly trout which has firmly fixed himself on your drag-fly the very worst thing yourself (or *ass*istant and unsuccessor) can possibly do, is to make a lounge with the landing-net, miss the by no means exhausted receiver, but master the drop-fly by securely hooking it among the meshes. The fish is sure to fill with virtuous indignation at the unlooked-for aggression of "two to one." He will probably plunge directly downwards, or make a sudden run beneath the boat, and you have then the unpleasant, and by no means productive option, of either allowing him to break your line, or of trying whether your net, with its iron-encircled rim, is fond of floating,—for be sure your trout can never make the lower circuit with your drag in his mouth, while yourself, an inhabitant of upper air, are holding on by the drop, and absurdly shouting—"On, Stanley, on," at the very moment that you are acting the part of an obstructive, by preventing the Member for Finsbury from visiting his Constituents.

If you have no boat, you had better fish from the shore. Some people (Professor Wilson, for example) prefer doing so, whether they have a boat or not; and if you don't desire to keep your feet particularly dry (in which case you had better also keep your room for a few days), you must wade—sometimes to a considerable actual depth, if you are a tall bold man, or to a proportional apparent depth, if you are a short shy one. A young bachelor may, of course, wade deeper than a married man, of the same dimensions, who has a wife and family.

In fishing from shore, try to get the wind behind you, and—at least if you have that object in view,—don't fish on the lee-side of the loch. When you have waded in as far as you feel inclined, and supposing the wind to blow either directly or diagonally from the shore, say into your right ear when your face is lake-ward, then take a few casts before you, and rather to the right hand, bringing your flies across and somewhat down the wind, then stretch out with a more lengthened throw directly forward, then sweep away, cast after cast, to the left, taking always two or three throws in every radius in a straight line with each other, beginning with the shorter and ending with the more extended stretch. Always complete your semicircle by casting quite in shore, almost in a line, though slightly in advance, from where you entered; for, if the place is good, the very ground on which you stand, may be a favourite haunt for food or play. Then take a step or two onwards, and recommence again from right to left, or *vice versa*, as your case may be—for if the wind, that fickle element, chops about, you must also act the weather-cock, and change your tactics.

If the majority of trout are of good dimensions,—we know not where the reader is at present, nor where eventually he yet may be,—say from a pound or thereabouts, and upwards, flies may be used as large almost as those for gilse or sea-trout. Remember you not, Sir T. D. L., how off the much-loved shores of lone Loch Chon, we raised, hooked, played, netted, and finally fried and fed upon, those broad and beautiful strong-toothed two-pounders—

some eighteen fishes of the largest class, and a score or two of sweet but smaller finsters? How bright the morning shone, as skirting the fair Loch Ard (itself a pleasant piece of sylvan landscape, mingling, as nature wills, the leafy Ruysdael, with the glowing Claude, or darker Thompson), then calm and breezeless as a mighty mirror, the vast cloud-capped Ben Lomond frowning on us,—soon did the "Great Apollo" transmute that lowering look to high uplifted splendour,—we turned among craggy windings, and hazel-skirted paths, and upland streams, lessening in all but beauty! How wild the cuckoo's cry from those lone mountain sides! or buzzard's wailing voice, "a viewless spirit of the elements," far up above those scenes of pastoral melancholy, where ghastly crags seem sometimes silent as gigantic spectres, and anon resound with varied and innumerable bleatings! Oh! hoary-headed shepherd, wise and well was thy remembrance of the Book of Life. Yet not in reckless glee, as thou mightest deem, we journied onwards. Thoughts "too deep for tears" lay on our inmost heart, and 'mid the brightness of the new-born day, sad waters dark and deep, and bitter as those of Marah, were ever flowing side by side with those crystalline streams,—and so we loved to hear thee then repeat, with tremulous voice and thin uplifted hands, the words of life. A holy fountain seems that sparkling spring by which you then were seated,—the odorous air fanning thy faded cheek, or gently moving thy silvered locks of "hoar antiquity." God fearing man! is still that Bible on thy feeble knee, or is it indeed with thee the "everlast ing day" that thou did'st pray for,—thy body in the grave, thy soul redeemed—through blood of Him who died "mighty to save." With hopes assured like thine,—

> In that still season of repose and peace,
> Why should a tear be in an old man's eye?

Alas! he thought of him *he* could not save—a fierce rebellious son, a turbulent mariner, who on the "perilous deep" blasphemed his Maker, trusting an arm of flesh even where astounding floods lift up their voices, and thinking not of HIM—who "mightier than the noise of many waters"—alone can "make the storm a calm, so that the waves are still."

Whatever may be either said or sung of salmon, we think it *luce clarius* that no fish affords the angler such varied or so constant sport as trout. For nine months in the year, under favourable circumstances, fly-fishing may be practised for them with success; and even in the winter season, should the weather be comparatively mild and open "Othello's occupation" is not gone. In deepish pools, and under sheltering banks, especially with bait, some hardy fins, though "few and far between," are still upon the move, with ready mouth. Westerly and southerly winds are the most favourable, particularly in spring; but during warm and cloudy summer weather, the point from which the air-currents come is of slight consequence. "He who considers the wind," says Solomon, "will never sow;" and the same remark is not inapplicable to angling. Whoever desires to become a successful practitioner in the art, must fish in all weathers, and under every variety of circumstances, however unpropitious the prospect may be. Trout are generally supposed to rise more freely during a dark and lowering day, following a clear bright night, as brilliant moonshine detains them in their lurking-places; and on the ensuing day they are consequently more inclined for food. On the other hand, after a gloomy or darkish night they are less easily tempted, having glutted themselves with moths and other nocturnal insects, which during the summer months are abundant on the waters. In throwing the line the angler should endeavour to make his gear fall as lightly as possible on the surface, and his flies should drop opposite, or somewhat above his own position, and then be played gently and neatly downwards and across the stream. When a trout is seen to rise at a natural fly or other insect, the artificial one should be offered him by being thrown, not directly over him, but about a yard higher up the stream; and, if he is inclined to rise again, he will probably meet it halfway. When a fish, on being hooked, descends beneath the surface, and struggles in the depths below, it is a pretty sure sign that he is well secured; but when he flounders on the surface, or leaps occasionally into the air, more care is necessary, as in that case the hook will frequently be found to be only skin-deep. In playing and landing a large trout the same precautions are necessary as in salmon-fishing, although in regard to smaller fish, if the angler is standing in the centre of a stream, and finds it inconvenient to wade frequently ashore, a few additional turns will exhaust the capture, which may then be drawn rapidly and steadily to hand, and secured by firm grasp behind the gills. We have not unfrequently practised a summary method of landing even tolerably large fish, which, though it cannot always be effected, is when practicable a great saving of time. If, from the moment the trout is struck, he is prevented from redescending in such a manner that the upper part of his head and eyes are retained above or on a level with the surface, he will for the space of several seconds be so much astonished as to be incapable of any active exertions, and will frequently allow himself to be drawn in that position, and without resistance, straight ashore.

The most generally approved mode of casting for trouts is to throw the fly across and rather a little up than down the stream, and then to bring it sweepingly across and downwards. We have not seldom found it a good plan to throw above and beyond any large stone towards the middle of the river, to allow the flies to sink several inches under water, and then to drag them pretty rapidly towards ourself, and close by the lower side of the stone. Good fish often lie thereabouts, and they seem to take your flies for some kind of eatable aquatics, which are about to conceal themselves beneath that stony covering. We have killed many a good trout too, just by throwing our flies high and dry upon the stone itself, and then allowing the wind or the weight of the line to drop them floatingly upon the surface. But there is in truth no end to the variety of pleasing small manœuvres by which the finny tribes may be successfully entrapped, and we intentionally refrain from mentioning them, that the reader may experience the greater pleasure of deeming himself a discoverer, when he finds them out for himself. Besides it would be about as easy to tell an attorney all the various modes of catching clients, as to teach an angler each device by which he may entangle trouts.

The following flies are in repute among anglers. The *black gnat* is supposed to appear about the end of April. The body is formed of a black strip from an ostrich feather, and ought to be dressed thick and short; the wings of a pale starling's feather, or dressed as a hackle with a pale dun.

The *March brown* or *dun drake* is said to be visible by the middle of March. The wings are made from the mottled feathers of a partridge's tail, and the body of hare-ear fur, intermixed with a little yellow worsted; a grizzled hackle for legs.

The *hazel fly*, so called, is of a rounder form, and is a killing lure in May and June, especially where bushes abound. The body is composed of ostrich harl of two colours, black and purple twisted together; the wings of the sandy-coloured feathers from under the wings of a thrush, or the reddish plumes of a partridge's tail; a bluish hackle, twisted pretty full, serves both for the under wings and legs.

The *great dark dun*, according to Mr Bainbridge, is one of the earliest flies which appear upon the water, and may be used in February, if the weather is mild. The wings are formed from the dun feathers of a mallard's wing; the body of mole-fur, mixed with a little dark brown mohair; a dark grizzled hackle for legs. Salmon frequently rise at this fly, which may be used with success early in the morning during the whole fishing season.

The *wren's tail* has no wings: the body is of sable fur, with a little gold-coloured mohair, and a feather from the tail of a wren.

The *grouse hackle* is also wingless; the mixture for the body is dark olive, dusky yellow, and a little gold-coloured mohair. It is formed of a fine mottled grouse's feather of a reddish brown, becoming rather dusky towards the but-end of the stem, and the downy portion, if any, plucked away.

The *stone-fly* is found along the edges of streams, and is a favourite article of food among trout. It is a species of Phryganea, and springs from a caddis or aquatic larva. The wings lie flat, and are supposed to be imitated by the mottled feather of a hen-pheasant or pea-hen. The body is composed of dark brown fur from a bear's skin, or the deeper part of a hare's ear, mixed with yellow camlet or mohair; a longish grizzled hackle is wrapped under the wings.

The *mealy brown* or *fern-fly* is excellent for grayling in May. Its wings should be formed from the under part of a thrush's or fieldfare's wing, especially from such feathers as have a yellowish tinge. Its body is of a dusky orange, from the light brown fur of a fox's breast, with a pale dun hackle for legs.

The *orange fly* has four wings made of the blue feather of a mallard-teal. The head is of the dark fur from a hare's ear; the body gold-coloured mohair mixed with orange camlet and brown fur, a small blue cock's hackle for legs. This is said to be an alluring fly to young salmon.

The *hare's ear* is chiefly used as a drop-fly. The wings are from the light part of a starling's wing-feather, and the body of dark hare-ear. According to Daniel, when the streams are deep, the same body winged with a rail's wing-feather and a red hackle is very killing during the summer season.

The *yellow dun* is used in the morning and evening during the months of April and May, and again in September. The body is made of yellow yarn unravelled, or with marten's fur, and mixed with a little pale ash-coloured fox-cub fur; the wings are formed upright, from the under part of a snipe's wing, with a pale dun hackle for legs.

The *hawthorn fly* is in use from the middle of April to the end of May, from ten o'clock till three. It has transparent wings, which may be imitated with the palest feather of a snipe or mallard's wing; horn shavings, or the membranous substance found in the core of an apple, serve the same purpose; the body is of black ostrich harl, with a black hackle for legs.

The *summer dun* has a thicker form than most of the dun flies, and is dressed upon a short-shanked hook. Mole-fur ribbed with ash-coloured silk is employed for the body; the wings are from the wood-pigeon, with an ash-coloured hackle for legs.

The *black-hackle fly* is an approved lure during warm weather, early in a summer morning. The body is formed of a thin-dressed ostrich harl, cut close; the wings, four in number, are from the pale feather of the starling's wing.

The *red spinner* is used as a dropper. The wings are formed of the greyish feather of a drake, tinged with reddish yellow; the body a red hackle, with a twist of gold. This fly is eagerly taken by chub in the evenings of July.

The *little yellow May* or *willow fly* resembles the green drake, on a small scale. The body is formed of yellow fur from the marten's neck, or of yellow worsted unravelled, and mixed with a very small portion of hare-ear fur; the wings are of mallard's feather dyed yellow. This fly appears early in May, and may be used till the appearance of the green drake, of which it is the usual precursor.

The *brown dun* is made of otter's fur mixed with lemon-coloured mohair; the wings are from the fieldfare, with a ginger hackle for legs. This is an excellent fly towards the approach of twilight.

The *green drake* or *May fly* appears about the second or third week of May, and continues about a month. The body is made of hog's down, or light bear's hair, intermixed with yellow mohair; or of barbers' yellow silk only, warped with pale flos silk, and a small strip of peacock's harl for the head: a bittern's hackle is the best imitation of the legs and dark stripes of the body, with the long hairs of the sable or polecat for the tail. The rayed feathers of a wild mallard, dyed of a greenish yellow, suffice for wings.

The *blue blow* is a very small fly used during the summer months, and for the first fortnight in August. It is made of a lapwing's top, or any dark blue fur, dressed on a very small hook. The wings are of thistle-down or bluish-white hackle.

The *black midge* is also a small species, the body of which is dressed with brownish-black silk, and a blue cock's hackle. It is taken freely after a shower in the summer evenings.

The *gray drake* follows the green of the same name, although they sometimes occur together. It is an excellent afternoon fly for large trouts. The body is formed of a dingy-white ostrich harl, dressed with flesh-coloured silk, and ribbed with a dark-grizzled cock's hackle; the head is made of peacock's harl, like that of the green drake; the wings from a mottled mallard feather, or that of a mallard-teal, and the tail of sable or polecat's hair.

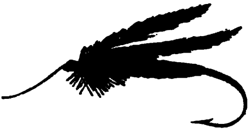
The *cinnamon fly* has four wings, large in proportion to the body. They are made from the pale reddish-brown feathers of a hen, dressed full; the body of dark-brown fur, with a ginger hackle for legs, This fly, according to Mr. Bainbridge, is excellent for the Welsh rivers during the months of August and September.

The *sand fly* forms an excellent lure, and may be very generally used from April to September. The wings are formed from the sandy-coloured feathers of the landrail's wing, with a ginger hackle for legs; and the bright sandy-coloured fur from the neck of a hare, mixed with a little orange mohair for the body. If dressed as a hackle, the feathers from under the thrush's wing resemble the natural hue of the wings of the insect.

The *great black ant* makes its appearance in sultry weather, from the middle of June to the latter end of August. The wings are made of the pale-blue feathers from beneath the snipe's wing, or from a tomtit's tail. The body is of black ostrich harl, made thick towards the tail and beneath the but of the wings; the legs of a reddish-brown hackle.

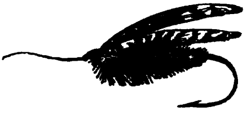
The *great red ant* is nearly contemporaneous with the preceding, which it resembles in size and form. The wings are made of a light starling's feathers; the body of gold-coloured mohair, or copper-coloured peacock's harl, with a ginger hackle for legs.

Among the preceding flies will be found some which will assuredly suit for any river, or for any period of the fishing season. The angler who places implicit confidence in the generally received opinion, that in every stream, and at each season, there is one particular fly in much more special request than any other, will do well to prepare for an unknown river, by making ready a few lines, each with three flies all of different character. For example, a March brown at the end of the line, a dun hackle, with a lighter or darker body to suit the weather or complexion of the stream, for the first dropper, and a red hackle with peacock body for the second dropper; or, 2*dly*, a sand fly at the end, with a grouse hackle or wren's tail, with orange body, for the first dropper; and a pale yellow or cream-coloured hackle over a bluish body, or one of the ant flies, as the second dropper. These are promising flies for most seasons of the year, though, like the others, they may require to be changed according to the circumstances of time and place, or the varying caprices of the finny tribes. We recommend them to the reader chiefly because we find them recommended to others in various works, but we shall now exhibit a very few which ourself and family are in the habit of using, and which the reader is welcome also to use, if he is so inclined.



THE PROFESSOR.

The *Professor* has his wings usually composed of a mallard wing, barred by nature in the usual way, and varied in the ground-colour by being dyed by art, lighter or darker, as may be deemed advisable. His body is formed of Paisley yellow flos silk, its texture rather tight, and slim its form. It is not always advisable to try to hackle him, although he may sometimes be so slightly, either with red or black about the shoulders, but his prevailing character is that of clearness, quickness, liveliness, and originality of composition, with a good deal of sarcastic sharpness about the barb, especially to bunglers who don't understand the nature of the Kirby bend.



GREEN MANTLE.

A famous fly for lochs (and for rivers not to be contemned), is that which we have named above, *Green Mantle.* The wings may be made to resemble the Professor's, but for variety they may be kept paler, that is undyed, and almost of a mealy hue, but *rayed*, and the body is built of dark green worsted rather rough and bulky.

The two preceding flies, when paired together, are sure to carry on their line, and produce between them a multiplicity of fine trouts.

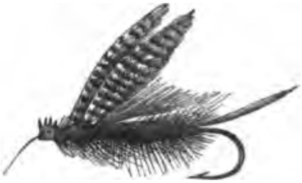
LONG TOM.

Long Tom is not so smooth a character as the Professor, nor yet so rough as Green Mantle. His wings are of barred mallard, "deeply dyed," or even of a blackish hue, and his body is formed of a cylindrical dubbing of the woolly hair of water-rat or mouse, with a couple of extended tails or *setæ*, at the end.

SAM SLICK.

Sam Slick is likewise a long continuous fly, with a look of "soft sauder" about him, though true to the back-bone, and his steel barb, which neither breaks nor bends, will by no means melt in any fishes mouth. His wings may be made of moor-fowl feather, narrow and lank in form, and his body is constructed of hare ear fur, with an innocent harmless-looking little tuft of yellow worsted just above the tail. This kind was invented by an ingenious gentleman of Nova Scotia, but is ready to serve any where, and does his duty well in the "ould country."

None of these flies are *Hackles*, properly so called.



THE GRIZZLY KING.

Not so the *Grizzly King*, who is a hackle *par excellence.* They call him *Coomberland* in the northern parts of merry England. His wings are broad and burly, formed of any undyed feather, bearing narrow natural bars of black and white, and he bristles with many stripes from head to heel, his dark green body being wound about with a grey or mottled hackle, and terminated by a fiery tail, turned up in what naturalists call an ensiform manner,—that is, somewhat after the fashion of a sword.

> "What seems his head,
> The likeness of a kingly crown has on."

He belongs to the Hanoverian order of insects.

Another noted hackle is the *Fysche Palmer.* He is what we call an *apterous* species, which—being interpreted—means that he has no wings, but is composed of a pair of black burly shoulders, a short, rounded bottle-brush kind of body, with a huge hackle—either of black or red as may be chosen—projecting outwards, backwards, and around in all directions.

An excellent and ingenious fly is also formed with a more lengthened bottle-brush body, of deep glossy green (lapwing or peacock), with a pair of black wings laid along the back, and tied neatly down over the terminal part of the body, just where the hook begins to curve. This fly should in angling be kept several inches under water. We think the trouts take it for an aquatic beetle, and we desire that no thoughtless person will ever maintain in their hearing that it is not so.*

These and other flies may of course be dressed of any dimensions, and on hooks of every form and size. In their larger shape they suit admirably both for sea-trout and gilse, except the Palmer, with which we are not in use to angle for the marine kinds, and therefore do not particularly recommend for that important purpose.

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* We may here add, what we omitted in its proper place, that a singularly successful fly for sea-trout, large or small, may be made with silver tinsel enwrapping the whole body from head to heel,—the wings, of a narrow elongated form, composed either of pure white or pale gray, or a mixture of both. It has a very glistening aspect in the water, looking somewhat like a small disabled fish, and sea-trout swallow it from a kindly fellow-feeling, believing it to be some relation of their own.

As we are extremely desirous to avoid even the appearance of bigotry towards our own opinions in relation either to the theory or practice of the angler's art, we shall here present a consecutive selection recommended by an experienced author and practitioner, in reference to the alleged succession of flies during several of the principal months of the fishing season. *1st*, For March, a dun fly, made of dun wool, and the feathers of a partridge wing; or the body made of black wool, and the feathers of a black drake: *2d*, For April, a stone-fly, the body made of dark wool, dyed yellow beneath the wings and tail: *3d*, For the beginning of May, a ruddy fly, made of red wool, and bound about with black silk, with the feathers of a black cock hanging dangling on his sides next the tail: *4th*, For June, a greenish fly, the body made of black wool, with a yellow list on either side, the wings taken off the wing of a buzzard, bound with black broken hemp: *5th*, The moorish fly, the body made of dusky wool, and the wings of the blackish mail of a drake: *6th*, The tawny fly, in great repute till the middle of June; the body made of tawny wool, the wings contrary, one against another, composed of the whitish mail of a white drake: *7th*, For July: the wasp fly, the body made of black wool, cast about with yellow silk, and the wings of drakes' feathers: *8th*, The steel fly, approved in the middle of July; the body made with greenish wool, cast about with the feathers of a peacock's tail, and the wings made of those of a buzzard: *9th*, For August, the drake fly, the body made with black wool, cast about with black silk, the wings of the mail of a black drake with a black head.

When rivers are very low and clear, from a long continuance of summer drought, it has been recommended to use a pair of wings made from the feather of a landrail, or the mottled feather of a teal, with a well-cleaned gentle fixed upon the hook. During a similar condition of the water, even when no wind is stirring, and the sun shining in its greatest lustre, trouts may be taken with a small *wren's tail*, *grouse*, *smoky dun*, or *black hackles*, the angler fishing straight down the water, by the sides of streams and banks, and keeping well out of sight, with as long a line as can be neatly managed, and the foot-lengths very fine. At these times the fish may be often seen with their dorsal fins above water, and with skilful management may be made to snap at the above-named flies. When one is hooked the rest dart off; but if the angler keeps concealed, they will return again in a very short time; and thus several fish may be taken even in summer from the clearest pools. Another plan has also been recommended as likely to prove successful when the weather is bright and the water low:—Take a line of about a yard in length, and fix it to a short stiff rod, and having baited the hook with a natural fly, such as the stone-fly, or the gray or green drake (Ephemeræ), drop it between bushes over steep hollow banks, or under the projecting roots of trees.*

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* Our friend Dr Richard Parnell once presented us with a fly

In fishing a river with which the angler has no previous acquaintance, the most approved practice is to try the eddies which are frequent at the corners of streams, and where the circular movement of the current throws out a frequent sustenance for the finny race. There the larger trout often lie; and it must consist with the experience of every angler, that an excellent capture is sometimes made repeatedly from some small spot behind or beside a particular stone, where, from day to day, one well-sized fish seems to succeed another in the favourite feeding ground. In this knowledge of particular localities consists the chief advantage of a previous acquaintance with the water. The smaller fish are found in most abundance in the widely spread and shallow streams, as well as in the extended parts of pools of no great depth. As a general rule, the angler may be advised to fish with the wind on his back and the sun in front, which not only gives him a greater command of his line, but prevents himself or his shadow from being so distinctly perceived. A strict adherence, however, to this plan is by no means advisable, as the angler's position in relation to sun and wind must frequently vary with the natural course of the ri-

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made by himself, which answered admirably in clear water and still weather, when used from behind banks, and in a dubbing sort of a way, with a short line. It was of small size, the wings broadish and rather short, like those of a house fly, and of a clear pale slate colour. The body was ingeniously made of Indian rubber, and six little pertinacious looking legs cut out of that material were made to project around it. It was the only artificial fly we ever saw that bore, in our opinion, the least resemblance to an insect. We have named it "Parnell's Persuader."

ver, the obstruction of overhanging wood, and the greater or less command of pool and stream presented by the varying form of the adjoining shore.

As night fishing is a favourite pastime with many anglers, we shall here allude to it as briefly as we may. If, in the introductory portion of our volume, we talked disparagingly of this department of the art, we here retract the expression, declare we meant nothing personal regarding the "sable goddess," and proceed to describe a few of the flies in most repute for the practice of nocturnal sport.

The *white lady* or *ghost fly* is made from the feathers of a white owl, the body of white ostrich harl, with a white cock's hackle wound around it.

The *water kelpie* is composed from the plumage of a brown owl, or the dorsal feathers of a hen of the same colour, the body of dark bear's hair, covered with a brown cock's hackle.

The *martin-barry* or *quaker fly* is formed from the tawny feathers of a white owl, for the wings; the body of lead coloured flos silk, surrounded by a drab hackle, and the anterior portion protected by a broad-brimmed black capote. It is an excellent friendly fly for moonlight.

As we belong to a family much addicted to rheumatism, we have not greatly indulged ourself in studying night pieces, but pale coloured flies are those most generally recommended. Yet Mr. Stoddart says,—"warm summer nights bring good sport if the fly angled with be large and black. A crow's feather wrapt round a bait-hook may be used successfully, especially in deep still waters and lochs, near the side, where the largest fish prowl in search of food." "White flies," he adds, "in imitation of moths are next thing to useless, though many anglers advise them. Recommend us always to pitch black flies for night fishing. Many is the fish we have hooked, not a yard's distance from the shore, with this expedient."

In regard to the propriety of angling in twilight hours, the following precepts flow from an experienced Penn. "Do not leave off fishing early in the evening because your friends are tired. After a bright day the largest fish are to be caught by whipping between sunset and dark. Even, however, in these precious moments, you will not have good sport if you continue throwing after you have whipt your fly off. Pay attention to this; and if you have any doubt after dusk, you may easily ascertain the point, by drawing the end of the line quickly through your hand,—particularly if you do not wear gloves."*

As *bait-fishing* for trout, though regularly followed by some, is less generally admired and practised than the more elegant use of the artificial fly, fewer words will suffice. When the streams are swollen and discoloured, fine trout may be taken with a running line without float, and so leaded that it shall touch the ground without resisting the force of the stream. The lead should be fixed about eight or ten inches above the hook; and the best baits are well-scoured earthworms. The dew, the garden, and the lob worms, commonly so called, are probably one and the same species, although they vary considerably in form, size, and colour, according to age, season, and the nature of the soil. The lob-worm, according to Daniel, is of two sorts, the old *knotted*, the young without knots, which some for distinction call *maiden lobs,* and others *red* worms. The latter kind, with a red head, a streak down the back, and a broad tail, are the most esteemed. By some they are called squirrel-tails. These and other worms, it need scarcely be observed, are easily obtained in fields and gardens, especially where there has been any recent mixture of vegetable or animal remains. They may be preserved for a considerable period, and even improved in their texture and condition, by being kept in damp moss, changed from time to time, and occasionally wetted with a little new milk. In dry weather, when worms are difficult to be obtained, they may be procured by emptying a few buckets of water in situations where they were known to occur during a moister season. The brandling worm is streaked from head to tail in alternate circles of a red and yellow hue, and is darker at its anterior than posterior portion. It occurs in old dunghills, in heaps of rich vegetable mould, and among rotten tan bark. This kind has advantage over the others, in so far as it may be used without preparation or scouring.

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* *Maxims and Hints for an Angler*, p. 19.

Though the choice of worms does not seem a very suitable subject for poetry, it has been thus versified by Mr. Gay in the *Rural Sports:*

You must not every worm promiscuous use,
Judgment will tell thee proper baits to choose:

The worm that draws a long immod'rate size,
The trout abhors, and the rank morsel flies;
And if too small, the naked fraud's in sight,
And fear forbids, while hunger may invite.
Those baits will best reward the fisher's pains,
Whose polish'd tails a shining yellow stains;
Cleanse them from filth, to give a tempting gloss
Cherish the sullied reptile race with moss;
Amid the verdant bed they twine, they toil,
And from their bodies wipe their native soil.

The preceding rhymes apply chiefly to the kind called gilt-tails. *Gentles*—gentle reader—are the larvæ of different kinds of carnivorous winged flies. They may be kept in a mixture of oatmeal and bran, and are readily produced in a piece of liver, or any other flesh or fish, exposed during warm weather in an earthen vessel to prevent their escape when grown to a proper size. All kinds of maggots, as well as those called gentles, serve admirably for the more delicate kinds of bait-fishing. The caddis worms, before alluded to as the larvæ of the Phryganea or stone-fly, when taken out of their cases, are a favourite bait for trout; and different kinds of grasshoppers are likewise used with great success. The creeper or water cricket, an aquatic larva, found under stones within the water-mark, ought also to be attended to by the natural bait-fisher.

The palmer worms or wool beds, as they are sometimes called, are the hairy caterpillars of certain nocturnal moths. Though refused by almost all birds except the cuckoo, they are swallowed by trouts, and may be preserved alive for many weeks in a box with damp earth, strewed over with the leaves of the tree, bush, or other herbage, on which the species was observed to feed.

The young brood of wasps and bees are useful to the angler; and for eight or ten days after their first appearance in summer there is no better or more killing bait than a small reddish beetle called the *bracken clock* in the north of England, the *Melolontha horticola* of naturalists. Salmon roe is greatly lauded by Barker, who appears to have been the first to discover its merits. "I have found an experience of late which you may angle with, and take great store of this kind of fish. First, it is the best bait for trout that I have seen in all my time, and will take great store, and not fail if they be there. Secondly, it is a special bait for dace and dare, good for chub, or bottlin, or grayling. The bait is a roe of a salmon or trout. If it be a large trout, that the spawns be any thing great, you must angle for the trout with this bait as you angle with the brandling, taking a pair of scissors and cut so much as a large hazelnut, and bait your hook; so fall to your sport,—there is no doubt of pleasure. If I had known it but twenty years ago, I would have gained a hundred pounds only with that bait; I am bound in duty to divulge it to your honour, and not to carry it to my grave with me. I do desire that men of quality should have it, that delight in that pleasure. The greedy angler will murmur at me, but for that I care not."

Many kinds of pastes are prized by the bait-fisher. They may be used for chub, carp, and bream in September and during all the winter months, and may be made up about the size of a hazel-nut; if for roach and dace, the bigness of a pea will suffice. All pastes are improved by being mixed up in the making with a little cotton wool, which makes them firmer and more tenacious, and hang better on the hook. They suit well for fishing in quiet places, with a small hook and quill float. We shall here subjoin a few recipes for the making of fishing pastes, which, although we introduce them under the head of the river-trout, may be regarded as equally efficacious in the capture of other kinds of fish. *

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* *Red paste* may be made with a large spoonful of fine wheat-flour, moistened with the white of an egg, and worked with the hands until tough. A small quantity of honey or loaf-sugar finely powdered must be added, together with some cotton-wool spread equally over the paste when pressed flat in the hand; it must be well kneaded, to mix the cotton thoroughly; colour it with a little vermilion. A small piece of fresh butter will prevent it from becoming hard, and it will keep good for a week. *White paste* may be composed of the same ingredients, omitting the vermilion: and *yellow paste* in like manner, with the addition of turmeric.

Salmon paste.—Take one pound of salmon-spawn in September or October; boil it about fifteen minutes, then beat it in a mortar until sufficiently mixed, with an ounce of salt, and a quarter of an ounce of saltpetre; carefully pick out the membrane in which the spawn is contained, as it is disengaged from it; when beat to a proper consistence, put it into gallipots, and cover it over with bladders tied down close, and it will keep good for many months.

Various oils were formerly in much repute among anglers for rubbing over their baits, but as we believe their beneficial effects were in a great measure imaginary, we shall not occupy our pages by their repetition. A single extract from Isaak Walton will suffice. "And now I shall tell you that which may be called a secret:—I have been a-fishing with old Oliver Henley, now with God, a noted fisher both for trout and salmon, and have observed that he would usually take three or four worms out of his bag, and put them into a little box in his pocket, where he would usually let them continue

Minnow-fishing for trout is a favourite pastime with many anglers, and the process is one by which very large fish are frequently captured. The tackle used resembles that for salmon, but is lighter and

half an hour or more before he would bait his hook with them. I have asked him his reason, and he has replied, 'he did but pick the best out, to be in readiness against he baited his hook the next time.' But he has been observed, both by others and myself, to catch more fish than I or any other body that has ever gone a-fishing with him could do, and especially salmons ; and I have been told lately, by one of his most intimate and secret friends, that the box in which he put those worms was anointed with a drop, or two or three, of the oil of ivy-berries made by expression or infusion ; and told, that by the worms remaining in that box an hour, or a like time, they had incorporated a kind of smell, that was irresistibly attractive, enough to force any fish within the smell of them to bite." We need scarcely remind the reader of the " Complete Angler," that that admirable work is of higher value for the manner in which the subject is discussed, and the beautiful accessories of pure style, poetical sentiment, and picturesque illustration, than for the amount of direct practical information which it conveys. The simplicity and goodness of Isaak Walton's nature seem to have induced a greater degree of credulity than was always consistent with an accurate perception of the truth, and hence every chapter abounds with statements which could not pass current in these more critical days. As a useful work in relation to the mere angler, it cannot in truth be said to hold a high rank, although its sweet thoughts and pleasant images must ever delight the general reader, and all who desire to refresh themselves by " the pure well of English undefiled."

" While flowing rivers yield a blameless sport,
 Shall live the name of Walton ; sage benign !
 Whose pen, the mysteries of the rod and line
Unfolding, did not fruitlessly exhort
To reverend watchings of each still report
 That nature utters from her rural shrine.—
 Meek, nobly versed in simple discipline,
He found the longest summer day too short,
 To his loved pastime given by sedgy Lee,
Or down the tempting maze of Shawford brook !
Fairer than life itself, in this sweet book,
 The cowslip bank and shady willow-tree,
And the fresh meads; where flowed from every nook
 Of his full bosom, gladsome piety !"

finer, with a single line of gut at the bottom. The hooks vary in size according to the general dimensions of the trout angled for; and the middle-sized and whitest minnows are the most esteemed. The following were Walton's directions for baiting, with a view to this department of the sport. Put your hook in at his mouth and out at his gill; then having drawn your hook two or three inches beyond or through his gill, put it again into his mouth, and the point and beard out at his tail, and then tie the hook and his tail about very neatly with a white thread, which will make it the apter to turn quick in the water: that done, pull back that part of your line which was slack when you did put your hook into the minnow the second time; I say, says Walton, pull that part of your line back, so that it shall fasten the head, so that the body of the minnow shall be almost straight on your hook: this done, try how it will turn by drawing it across the water or against a stream; and if it do not turn nimbly, then turn the tail a little to the right or left hand, and try again, till it turn quick. We may add, that the practice of fishing with the artificial minnow is justly discarded by all judicious anglers.

THE GREAT LAKE TROUT.*

It appears that this gigantic trout of the British fresh-water lakes, though never clearly characterized as a distinct species, has at various times excited the attention of Ichthyologists. Trout of enormous dimensions are mentioned by Pennant as occurring in the Welsh lakes; and Donovan gives Loch Neagh in Ireland as another locality. Very large trout have been killed in Ullswater in Cumberland, and still larger in Loch Awe in Argyllshire. We stated elsewhere several seasons back, that the late Mr. Morrison of Glasgow claimed the merit of first calling attention to this fish in the last named locality towards fifty years ago. "We doubt very much," says Mr. Stoddart, "the strength of his claims to this discovery; and from enquiries made by us at Dalmally, Cladish, Inveraw, and other parts of the surrounding country, we are led to believe that this species of trout has been well known there from time immemorial; nay, it is impossible but that individuals of the kind must have been taken centuries ago, during the spawning season, in the Urchay, Awe, and other rivers, by the ancient method of destroying fish with the leister." Now, nobody ever supposed that Mr. Morrison actually *invented Salmo ferox*, but ourself and others merely desire to insinuate—we do not even assert it *positeevely*—that the ingenious gentleman in question seems to have been the first to call towards it the attention of modern anglers. That it was killed and eaten by hungry Celts from the earliest ages of the world, is, we doubt not, certain. Indeed, philologists are not wanting who derive the very name of that exposed people from the circumstance of their winter food consisting frequently of *Kelts* (in Gaelic *Ceeoagchghalts*), or ill-conditioned fishes of the genus *Salmo*, including alike the *salar*, *eriox*, *trutta*, *fario*, *ferox*. At all events, we grant our "Scottish Angler" that kilts and kelts must have struggled oft for mastery in many a Highland water.

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* *Salmo ferox*, Jardine. We were originally indebted for the principal materials of our account of this interesting fish to a manuscript of Sir William Jardine, with which we were kindly favoured by the author. It forms a part of a Series of Memoirs on British Fishes—especially the *Salmonidæ*—which that accurate and assiduous naturalist has been for some time past preparing for publication.

This huge species attains a weight of from 20 to 30 pounds, and is of great power, even in comparison with its gigantic size. It may be said, indeed, to be by far the most powerful of our fresh water fishes, exceeding the salmon in actual strength, though not in activity. The most general size caught by trolling, ranges from 3 to 15 pounds, beyond which weight they are of uncommon occurrence. The largest recorded to have been killed in Loch Awe amounted to 25 pounds, and the heaviest we have lately heard of as captured there, was a few ounces under 20 pounds. Mr. Lascelles, from Liverpool, was for many seasons an assiduous and successful troller of this species; and indeed it appears that any persevering sportsman is almost certain—with proper tackle—to obtain specimens in Loch Awe weighing from 10 to 15 pounds.

If hooked upon tackle of moderate strength, they afford excellent sport; but the general method of fishing for them is almost as well adapted for catching sharks as trout; the angler being apparently more anxious to have it in his power to state that he has caught a fish of a certain monstrous size, than to enjoy the pleasure of the sport itself. However, to the credit of both parties, it may be stated, that the very strongest tackle is sometimes snapped in two by its first tremendous springs. The ordinary method of fishing for this king of trouts is with a powerful rod, from a boat rowing at the rate of from three to four miles an hour, the lure a common trout from three to eight inches in length, baited upon six or eight salmon hooks, tied back to back upon stout gimp, assisted by two swivels, and the wheel-line strong whip-cord. Yet all this, in the first impetuous efforts of the fish to regain its liberty, is frequently carried away for ever into the crystal depths of Loch Awe![*]

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[*] This monster trout occurs in Loch Rannoch, Loch Tummel, and many other central lochs of Scotland. We happened to reside for several weeks last season (1843) in the vicinity of Pitlochrie, and spent most of our time during that delightful autumn by the banks of those richly wooded and occasionally rock-bound rivers, which render the Pass of Killicrankie, and its neighbourhood, so noted in the annals of romantic scenery. The weather, however, was too fine for anything connected with the art of angling, except the exercise of patience. But we picked up from an authentic source, the following anecdote, in illustration of the great strength and indomitable perseverance of *Salmo ferox*. A huge fish was perceived by some of the country people in a pool of the river below the Bridge of Tummel. As its dimensions seemed so greatly to exceed those of a trout, it was deemed a very large salmon, and of course treated accordingly. A skilful poacher, armed with deadly leister, struck it in the usual way, the fish seemed transfixed, but the long wooden spear or handle broke with the force of the blow, just above the iron fangs. The expected prey was lost, seeming to disappear into the darker depths of the river. The Tummel is itself a strong and swiftly flowing stream, with rapid rushings here and there through rocky bounds, and a run from Loch Rannoch, out of which it flows, to the place in question, of seven or eight miles. Loch Rannoch itself, with its calm deep waters, occupies a basin of about 12 miles in length. Nine days after the harpooning feat re-

When in their highest health and condition, and indeed during the whole of the time in which they are not employed in the operation of spawning, these fish will scarcely ever rise at a fly. We once saw, however, what we regarded as a middle-sized *Salmo ferox* (a fine fish weighing between six and seven pounds), taken with a fly by our friend Dr. Greville in Loch Assynt, where the species is more than usually numerous.* But they certainly seem in general to be almost entirely piscivorous; so that —with the exception of night lines baited also with trout—trolling is the only advisable mode of angling for them. The young, however, rise very freely at ordinary lake-trout flies, and are generally caught in this way from one to one and a half pound weight. They occur abundantly near the outlet of Loch Awe.

This noted *Salmo ferox* appears to be very exclusively a lake species,—seldom ascending or descending rivers, or wandering in and out of them, as other species do, and it is never known to migrate to the sea. In autumn and early winter—as we ascer-

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ferred to, a trout weighing upwards of thirty pounds was found lying dead in a pool of the river, a mile or two *above* Loch Rannoch, with the heavy head of the leister not transfixing, but adhering to, the narrow portion of its body, between the adipose fin and tail, the iron teeth pressing it closely upon either side. It must thus have worked its way against the current of the river, and through the long continued course of the loch, for a distance of more than twenty miles, with the incumbrance of a heavy and incommodious iron implement on that very part of the body on the untrammelled exercise of which its power depended.

* Our last angling party to Loch Assynt killed above a dozen specimens of *S. ferox*, during a few days, not at all exclusively devoted to the capture of that or any other kind of fish.

tained in Sutherland—they ascend the rivers with a view to spawn; but they do not proceed in this their upward journey, with the determined and far-searching pertinacity of their bright congener the salmon. It has been alleged, that in Loch Awe they spawn along the deep banks of the lake in the neighbourhood of the gorge, and in the gorge itself, where it empties its immense waters, and forms the river Awe. They are said to remain engaged in this operation for two or three months, and at this time their instinctive tendencies are so far changed, that they will rise at large and gaudily dressed salmon-flies, and may be either angled for from the banks, or trolled with a cross line, where the outlet of the lake is narrow. They appear but seldom either to ascend the streams which enter the loch, or to descend the Awe itself to any extent, though an occasional straggler has been taken some way down the river. When in good season, and in their strongest condition, they appear to roam indiscriminately through every part of the loch, though there are certain spots which may be more depended upon than others, and where an experienced angler will have little difficulty in hooking one of these fine fish. To their great strength we may observe, that they add unequalled rapacity; and after attaining to the weight of three or four pounds, they seem to feed almost exclusively on smaller fishes,—not sparing even their own offspring,—and may be regarded as great an enemy to their smaller companions even as the all-devouring pike. A small trout of this species, not weighing more than one and a half pound, will often dash at a bait not much inferior to itself in size; and instances are recorded of larger fish following with eager eyes, and attempting to seize upon others of their own kind which had been hooked, and were in the act of being landed by the angler. It is, we presume, on account of this strong manifestation of a more than usually predaceous disposition that Sir William Jardine has named the species *Salmo ferox*.*

It is indeed, in one sense, a fish of remarkable ferocity, for it will return to the same bait, once and again, even after it has previously been dragged by its bristling hooks for a distance of forty or fifty yards. We once saw a *Salmo ferox* frighten a silk-mercer nearly out of his senses. We had consented to take the latter across one of our northern lakes, and in so doing we killed a goodly thirteen pounder, which we dropped on the moist and slimy bottom of our boat, without taking the usual humane precaution to stun it with a blow upon the skull. Mr. T. Perkins, in stepping over the thafts, inadvertently trod upon its tail, on which *S. ferox*, whether maliciously or merely mechanically, we cannot say, gave a sudden heave with such convulsive force, as actually to raise his gaping head and brawny shoulders upright into the air, exactly as if he meant to make a snap at the intruding Cockney, whose faithless foot-ing owned " the soft impeachment," and he fell across his seat in terror and dismay. One of the party concerned (*S. f.*) actually died in consequence before we got on shore, and the other two had also nearly expired,—the silk-mercer with fear, ourself with laughter.

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* We believe this great lake trout corresponds to the species previously named *Salmo lacustris* by Berkenhout, but as the latter title is applied by foreign naturalists to a continental kind, which is not regarded as identical with our own, its adoption might lead at least to the nominal amalgamation of two distinct species, and should therefore be avoided.

When in perfect season, and full-grown, the species in question is rather a handsome fish, though the head is always too large, and prolonged to be in accordance with our ideas of perfect symmetry in a trout. The body is deep and thickly formed, and all the members seem conducive to the exercise of great strength. The colours are deep purplish brown on the upper parts, changing into reddish grey, and thence into fine orange-yellow on the breast and abdomen. The whole body when the fish is newly caught, appears as if glazed over with a thin tint of rich lake-colour, which fades away as the fish expires, and so rapidly, that the progressive changes of colour are easily perceived by an attentive eye:—

> . . . . it dies like parting day,
> . . . . each pang imbued
> With a new colour as it gasps away,
> The last still loveliest, till—'tis gone and all is grey.

The gill-covers are marked with large dark spots; and the whole body is covered with markings of different sizes, and varying in amount in different individuals. In some these markings are few, scattered, and of a large size; in others they are thickly set, and of smaller dimensions. Each spot is surrounded by a paler ring, which sometimes assumes a reddish hue; and the spots become more distant from each other as they descend beneath the lateral line. The lower parts of these fish are spotless. All the fins are broad, muscular, and extremely powerful. The dorsal fin is of nearly the same colour with the upper part of the body, and is marked with large dark spots. The caudal fin is large and fleshy, and the tail is in consequence remarkable both for breadth of form and strength of action. It is square in those of adult growth, or might even be described as rather rounded terminally; but in the young it is slightly forked, and appears to fill up gradually as the fish advances in age and bulk. In the common trout, on the contrary, the forked shape of the tail is an abiding character. The pectoral, ventral, and anal fins, are very muscular on their anterior edges, and of a rich yellowish-green colour, darker towards their extremities. We have been unable to satisfy ourselves regarding the existence of any permanent or even prevailing difference in the number of the fin rays in this species and the common trout. Those of the dorsal fin seem to us to vary from thirteen to fifteen, as they do in the ordinary trout from twelve to fourteen, and the rays of the other fins likewise present an occasional (it may be a characteristic) variation in both species.

The flavour of this great lacustrine fish is coarse and indifferent. The colour of the flesh is orange-yellow, not the rich salmon-colour of a fine common trout in good season. The stomach is very capacious, and on dissection—differing singularly in this respect from the salmon—is almost always found gorged with fish.

We have found of late years that the species is much more common than it once was deemed. Those of Ullswater seem but seldom to attain beyond a weight of eight or ten pounds, but a much greater size is by no means infrequent in Lochs Awe and Laggan, and enormous specimens are also captured still further north, in Lochs Shin, Loyal, Assynt, and several smaller lochs of Sutherland.* The existence of *Salmo ferox* in Loch Neagh had been long known, and an excellent observer, Mr Thomson of Belfast, has ascertained its occurrence in Loch Corrib, in the county of Galway, and also in Loch Erne, in the county of Fermanah. Mr. Thomson informs us, that it is in fact the characteristic and ordinary trout of Loch Neagh, and we agree with that gentleman in thinking that it will be found to inhabit most of the considerable lakes of Ireland, as we know it does the majority of those of Scotland.†

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* "At Mr Young's we met Mr. Mackay, son of the keeper of the Duchess's cottage at Lairg, who informed us that he had seen the large trout of Loch Shin, fourteen and fifteen pounds weight, spawning in the small stream that connects Loch Shin with the little loch above it. His father told us afterwards that he had taken them from twelve to fifteen pounds, with set lines, baited with a small trout. On enquiring (of Mr. Baigrie) about these large trouts, he told us that he had heard of their having been caught in Loch More twenty-five pounds weight, and had seen them twelve pounds."—Dr. Greville's *MS. Notes.*

† In that magnificent chain of English lakes of which Windermere is the chief, and which includes Grassmere and Rydal, we think the species not synonymous with *Salmo ferox.* The lake trouts, properly so called, of these beautiful waters, when full-grown, seem to range from three to five pounds, and have in one or two rare instances

A difference of opinion exists among naturalists regarding the identity of our present species, with that gigantic one of the Swiss lakes, a specimen of which, killed in the Lake of Geneva, weighed sixty-seven pounds. Though equalling, or even exceeding the salmon both in size and strength, it differs from that fish, and conforms with our own, in never seeking the waters of the sea. Indeed, the existence of the same species in the Lake of Constance, the available communication of which with any saline waters

been taken of the weight of six and even eight pounds. Those of Ullswater, again, which does not belong to what we have denominated the Windermere chain, correspond more nearly in size and other characters with the species found in the lakes of the Scottish Highlands. We would particularly recommend to the attention of sportsmen the great fresh-water river trout, or *bull trout*, as some erroneously call it. This is regarded by many anglers as an aged or over-grown individual of the ordinary kind (*Salmo fario*) ; and by others, especially when found in the autumn, as a lake trout which had left its more usual haunts for the purpose of spawning. The accuracy of the latter opinion is, however, interfered with by the occasional occurrence of this variety in such unambiguous situations as the Clyde above the falls, the waters of which have no communication with any lake. This species sometimes attains the weight of eight, ten, or even twelve pounds ; but it differs from the Loch Awe trout in being generally, if not exclusively, found in rivers. Those of many of the lesser Highland lakes, such as Loch Ard and Loch Chon, ascend the mountain streams in the autumn to spawn, and in the ordinary practice of angling (with the artificial fly) are rarely caught above the weight of three pounds. We several seasons ago received some very singular trouts from a small loch called Lochdow, near Pitmain, in Inverness-shire. Their heads were short and round, and their upper-jaws were truncated like that of a bull-dog. They do not occur in any of the neighbouring lochs, and have not been observed above the weight of half a pound. This peculiar variety has since been figured by Mr. Yarrell. Trouts of the ordinary shape likewise occur in Lochdow.

is cut off by the falls of Schaffhausen, demonstrates their independence of the ocean. It does not appear, from any information we possess, that these great Continental lake trouts ever condescend to rise at the artificial fly. Those we saw at Constance, many years back, were taken by trolling, much after the method we have just described, and we had then no doubt that the fish itself was the same as our *Salmo ferox.* But when the latter was shewn to M. Agassiz, on his visit to Edinburgh in 1834, he gave it as his opinion that it differed from the Swiss kind, and we therefore succumb to his opinion. We shall not, however, succumb to any one who insists, as many do, that the gigantic trout of Lake Wener in Sweden, is a true and actual salmon debarred by circumstances from visiting the sea. Thus Mr. Lloyd observes, that, "near Katrineberg there is a valuable fishing for salmon, ten or twelve thousand of these fish being taken annually. These salmon are bred in a lake, and in consequence of cataracts, cannot have access to the sea. They are small in size, and inferior in flavor."* Now we saw a basket full of these fish at Trollhaetta, in the autumn of 1819, and found them to be great loch trouts, the same, so far as we could judge, with those of Scotland. It remains, perhaps, to be determined whether they agree with or differ from such as inhabit the Swiss waters. Mr. Yarrell has adduced this lacustrine incident as a proof that salmon may exist permanently in fresh water;† but we are glad to perceive that in his *Supplement* ‡ he states his belief that specimens of the great Swedish trout from Lake Wener, killed by Sir Thomas Maryon Wilson, were the same as our Scottish kind. They were taken by spinning with bleak, and the largest measured forty-two inches in length, and weighed about thirty-four pounds, the second thirty-two, the third twenty-seven. These large trouts were males. The females are said rarely to exceed twenty-two pounds.

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* FIELD SPORTS, vol. i. p. 301.

† BRITISH FISHES, vol. xii. p. 20.

‡ P. 14.

We fear we have been rather prolix on this, as well as on other departments of our subject. But we felt anxious to call the attention of anglers and naturalists to these curious enquiries, being satisfied that a more attentive examination of the finny tribes, even of our own country, will probably bring to light several new species, and certainly more clearly illustrate the history of others which may be still regarded, in many points of their character, as "children of the mist."

Meanwhile let us solace ourselves with a song. We shall choose a melancholy measure,—one which in bygone years was chaunted well in nights Ambrosian, when old C. N. was in his prime. "Ah! wae's me," said the Ettrick Shepherd, speaking of the Highlanders and their forsaken homes, "pity on us! was there a bonnier sight in the warld, than to sail by yon green shores on a braw summer's evening, and see the smoke risin' frae the puir bodies' bit shielings, ilk ane wi' its peatstack, and its twa three donnered pines, or saughs, or elms, sugh sughin' owre the thack in the gloamin' breeze?"

CANADIAN BOAT-SONG.

(FROM THE GAELIC.)

Listen to me, as when you heard our father
Sing long ago the song of other shores ;—
Listen to me, and then in chorus gather
All your deep voices as ye pull your oars.

CHORUS.

Fair these broad meads—these hoary woods are grand ;
But we are exiles from our fathers' land.

From the loan shieling of the misty island
Mountains divide us, and the waste of seas,—
Yet still the blood is strong—the heart is Highland,
And we in dreams behold the Hebrides.

Fair these broad meads—these hoary woods are grand ;
But we are exiles from our fathers' land.

We ne'er shall tread the fancy-haunted valley,
Where 'tween the dark hills creeps the small clear stream,
In arms around the patriarch banner rally,—
Nor see the moon on royal tombstones gleam.

Fair these broad meads—these hoary woods are grand ;
But we are exiles from our fathers' land.

When the bold kindred, in the time long vanish'd,
Conquer'd the soil, and fortified the keep,—
No seer foretold the children would be banish'd,
That a degenerate lord might boast his sheep.

Fair these broad meads—these hoary woods are grand ;
But we are exiles from our fathers' land.

Come foreign rage—let discord burst in slaughter !
Oh ! then for clansman true and stern claymore,—
The hearts that would have poured their blood like water,
Beat heavily beyond the Atlantic roar.

Fair these broad meads—these hoary woods are grand ;
But we are exiles from our fathers' land.

Having now endeavoured to describe the natural habits, the characteristic features, and the approved modes of capture, of the different kinds of trout and salmon,—species which so greatly surpass all others in the amusements yielded to the angler,—we shall proceed (we doubt not with the joyful assent of all our readers) to a briefer consideration of the remaining subjects of our sport.

THE CHAR.*

Whether the case char (*S. alpinus*) and the Torgoch or red char (*S. salvelinus*) are distinct or identical, is a point on which we have not yet made up our mind. Mr. Yarrell thinks that the latter which he designates as the Welsh char, is specifically different from the former, which he names the northern char. If they are actually different, then it is chiefly to the northern species (that is, the characteristic kind of the lakes of Cumberland and Westmoreland) that the following observations apply, for we have no personal knowledge of the Welsh fishes. Our own belief, indeed, is that both the case char and the red char inhabit Windermere, and that the principal distinction in their habits consists in this, that the former ascends the rivers, where it spawns about Michaelmas, whereas the latter deposits its ova along the shores of the lake, and not till the end of December, or the beginning of the year. Let this fact be more attended to than it has hitherto been in attempting to determine upon the distinction or identity of the species. We are certain, however, that the old notion is erroneous, that the case char is distinguished by having the first rays of the ventral and anal fins of an opaque milky white, while these rays are uniform with the rest of the fin in the other so called species.* This opaque margin is common to all char at certain seasons, and, as every angler knows who fishes with his eyes open, is of frequent occurrence in the common trout. At the same time, although we here follow our friend M. Agassiz in placing the two supposed species of char under one denomination, yet we not only admit, but particularly desire our readers to remember, that the history of this fish, whether single or distinctive, has not yet been clearly made out.

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* *Salmo umbla*, Linn. Agassiz. *Salmo alpinus*. Penn.

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* To illustrate this character of colour, we shall here extract the following memoranda from our note-book, made some seasons back, on six specimens of char (supposed to exhibit characteristic examples of the different varieties or kinds), selected from a hawl of the net in Windermere on the 12th of December. "No. 1. is a very beautiful fish,—the ground colour of the body pale ashy brown, somewhat lighter beneath the lateral line. The sides are richly marked with scarlet spots of different sizes; the whole of the under surface from the pectoral fins to the tail, is brilliant scarlet. The fins are margined anteriorly with an opaque white stripe, followed by a blackish brown portion, passing posteriorly into deep crimson. The tail is blackish-brown. The nose and front part of the head are marked by a black spot. The dorsal fin is of the same pale-brown colour as the back, slightly inclining to blue." This seemed a male. "No. 2. is a smaller fish, brown upon the back, and becoming gradually paler beneath; the abdomen and lower parts are dingy white, tinged with bluish colour. The ventral and anal fins are margined with white, their other parts margined with flesh colour; the pectoral fins are reddish brown; the dorsal fin and tail blackish brown. The sides of this specimen are indistinctly marked with yellowish-red spots." This was a male red char, which appeared to have spawned. "No. 3. is of a blackish-brown colour, somewhat silvery, paler beneath the lateral line, and passing into yellowish-white on the belly. The pectoral, ventral, and anal fins are brown, tinged with red. The dorsal fin and tail are brownish-black. The upper part of the head is also black. The sides of this specimen are also distinctly marked with numerous very pale, almost colourless spots. No. 4. resembles the last described, but is smaller." These the fishermen called two geld fish, full-grown and half-grown. "No. 5. is a very dark fish, brownish-black upon the back and sides, becoming, as usual, gradually paler beneath the la-

Char are abundant not only in several of the English lakes, and a few of the Welsh ones, but in the greater number of those of the north of Scotland, when of any considerable extent. In these latter localities, however, they are more seldom taken than elsewhere, from the absence of the practice of *netting*, and the general unwillingness of this fish to take a

teral line. *The pectoral, ventral, and anal fins are distinctly margined* anteriorly, with opaque white; the central portion of these fins is brownish-black; and their interior margins flesh colour. The upper part of the head is dark; the belly of a dingy red. No. 6. resembles the preceding, except that the under surface, instead of being dingy red, is pale reddish-white. *The ventral and anal fins* are reddish-brown *margined anteriorly with white.* The pectoral fins are reddish-brown, the dorsal fins are brownish-black. Both these specimens are marked on the sides with obscure pale-reddish spots." These two fish were what the fishermen called *case char*, (Salmo alpinus?) male and female; yet the pectoral, ventral, and anal fins of the former, and the ventral and anal fins of the latter sex, were conspicuously margined with white, although that character is usually regarded as distinctive of the torgoch or *red char.* Perhaps the fact of the male having the pectorals so margined, while those of the female were of uniform colour, may be regarded as of some importance, as tending to show that the character itself is in some measure variable, and therefore insufficient to constitute a specific distinction. Every angler knows that the under fins of the common trout are frequently margined on one edge with an opaque line of milky white.

fly or bait. The char is of great repute in the Lake of Geneva, and is also found in many of the mountain lakes of the north of Europe. Hence the title of *Salmo alpinus*, by which it is designated by several continental naturalists.* It attains to a respectable, but never to a large size, being rarely taken in Britain above two pounds—the more usual weight being under half a pound. When in full condition it is a fish of great beauty,—colour of a greyish green or greenish brown above, shaded into the most delicate white on the lower parts, and suffused with a tender blush, which may be compared to that so often seen on the breast of the gull tribe when newly shot in spring. The body is sprinkled over with pale spots of considerable size. In this state they remain in the deeper parts of lakes, and are but seldom taken, although we doubt not that they might be so, were the simple practice adopted of hanging a herring-net in the deep water, instead of trying only the winter method of hauling in shore. In fact they retire during the warmer months to the deepest parts of the still waters,—the fishermen engaged in throwing their nets for pike, perch, and trout, over the very grounds where—during the colder season of the year—the char abound, never catching any throughout the summer season. Yet we caught them by the former method, in their prime *silvery* state, in Sutherland in June.

On the approach of the spawning period they seek the mouths of the tributary streams, and are taken in vast numbers at the very period when their preservation and consequent increase ought to be most strictly attended to, and when, in truth, they begin to deteriorate in their condition. At this season the colouring of the upper parts becomes darker, the fins are very rich, and the sides and abdomen assume a beautiful and brilliant red,—the whole spotted with small marks of a paler hue.*

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* *Salmo alpinus* of Bloch (Part iii. Pl. 104,) is, however, regarded only as a common trout.

Although these fish—in a culinary point of view—are deservedly the most highly prized of all our permanently fresh water species, we are sorry to say that they are seldom attainable by the angler's skill. Of late years, however, they have certainly risen more freely in the meres of the north of England than in former times; but the capture of a char by rod and line is still regarded as an uncommon occurrence. In angling for this fish the same flies may be used as those best adapted for the smaller sized lake-trouts;

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* The chief feeder or head stream of Windermere consists of two branches, the Brathay and the Rothay, which meet a short way above the lake, into which they speedily pour their united waters. The Brathay is the left hand branch—as we ascend from the lake—and draws its sources from the mountain vales of Langdale, reaching Windermere without any deep resting-place,—while the Rothay has previously formed and flowed from two consecutive lakes, Grassmere and Rydal. The char, in ascending from Windermere to spawn, invariably turn to the left, and ascend the Brathay—though to no great distance—and as invariably—so far at least as spawning purposes are concerned—avoid the lake descended waters of the Rothay. They also spawn lower down the lake of Windermere, at the mouth—or a short way upwards—of the stream called Troutbeck, which is also derived from the flow of mountain tributaries, without any lesser or intermediate lake.

and as the latter may be said to occur wherever the former is found, the sportsman has the better chance of making amends for the probable disappointment which will attend his pursuit of the one, by a more successful capture of the other.

We owe the following interesting memoranda to our esteemed nephew, Mr. John Wilson, Junior, of Elleray. "The season for fishing char (with rod and line) in Windermere and Coniston, commences about the end of May, and, I should say, is over by the first or second week in July. Trolling with a smallish minnow is by far the most successful mode of angling for this fish. It may, however, be taken with the artificial fly,—the green and grey drake being the favourites. I killed three one day in May last with a small red professor. A Bowness fisherman on the same day, trolling without intermission from six in the morning till six in the evening, killed *six and twenty*, being the greatest number that has been taken in Windermere in a single day by one person for many years. In Coniston, where this fish is more abundant, I believe it is by no means uncommon to kill three or four dozen in a day. In regard to the size of char in Windermere, I should say they average three to the pound. I never saw one that was a pound. Billy Balmer told me that he saw one that was a pound and a quarter, and that it was the largest ever taken in Windermere."

In relation to the same subject, in a different locality, we may also add the following extract of a letter with which we have been favoured from another skilful hand. "A small red char is found in Loch

Achilty, Ross-shire, on the property of Sir George Mackenzie. It takes the fly greedily in warm still weather, and what is singular, during all the summer and autumnal months. I have captured eighteen in a forenoon in July,—raising many more. My flies were of various sorts, from a midge to one as large as a sea-trout fly. The water of Loch Achilty is singularly deep and transparent,—the soil is rich and loamy, and contains large quantities of imbedded wood,—black oak especially. It is supplied by numbers of minute streams, but has no visible outlet, being supposed to discharge itself subterraneously. The char found in it average eight or nine inches in length; we, however, caught one much larger. They rise with less velocity than the trout, and on missing the fly, unless injured, will return to the hook. In Strathglass there is a Loch Bruiach, where char are caught of a much larger size, but chiefly with the net,—except in the month of October, when, as our informant, the Rev. Mr. Chisholm, told us, they may be taken in the shallows with the rod, but at no other season."*

On dissecting the char which we killed in Sutherland (by net) in June, we found the stomach of the majority empty, but the lower part of the intestine filled with a green vegetable residuum. This we ascertained to be the remains of the cases of aquatic larvæ (*Phryganidæ*), a few of which we afterwards discovered in a half digested state in the upper portion of the intestinal canal. Where this natural bait occurs we have always found the fly formerly described under the name of "green mantle," to be a killing lure,—yet we tried it unavailingly, though perseveringly, in the northern Loch in question,—Loch Borley, near Keoldale, Durness. It may be mentioned as a singular fact, that although well stocked with char, it is believed not to contain a single trout. A curious coincidence with Loch Achilty may also be noted regarding it, to wit,—that its waters escape by a subterranean communication with another loch, of which we at present forget the name, but which contains fine fresh water trout, some of them so light and silvery as to exhibit much of the aspect of sea-trout. There is another loch near these two, which contains neither trout nor char, and as a fact of this kind is not at once instinctively discovered by the angler, and was not previously communicated to us, we fished it for half a day with more skill than success. Our movements were steadily watched the whole time by a south country shepherd, who, rolled up in his plaid, his dog Yarrow close beside him, and both beneath the cozy shelter of a whin dike, seemed curious to ascertain how long we would continue our attempt at sport. When at last, despairingly, we turned us homewards,—a hospitable and most pleasing home was Mrs. Scobie's,—and neared our pastoral friends couched in their "sunny lair," the "human" without moving either head or heel, drawled out as follows; "Ye'll no hae killed mony trouts there?" "No, we've had no sport at all." "Na, na, it's weel kent there was never a trout in that loch frae the beginnin' o' the creation."

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* From the MS. of T. T. Stoddart, Esq.

He thus possessed the key to our discomfiture; but, from some unknown silential principle, on which we have since deeply pondered but failed to ascertain, he had declined or at least delayed, to reveal the secrets of that dark abyss. However, we consoled ourselves with the "*experientia docet*" of Dr. Ruddiman, and philosophically repeated as we travelled across those breezy uplands,—

> Happy the man who studying nature's laws,
> From known effects can trace the secret cause.

THE GRAYLING.*

This beautiful fish delights in clear and rapid streams, and occurs in many of those which bear that character in the more hilly or mountainous districts of England, particularly in Shropshire, Yorkshire, and Derbyshire,—reaching as far north as one of the tributaries of the Tyne in Northumberland. We are not aware of its occurrence in any river of the mainland of Scotland, although Mr. Low states that it is not unfrequent in the streams of the Orkney Islands. We deem it more than probable that he has mistaken for it some other fish.† Its European range seems extensive,—if the various authors are correct in their name, and each designates the same species. According to Linnæus it is common in Lapland, where its viscera are used instead of rennet, with the milk of rein-deer. It is also found in Siberia, in Prussia, and Pomerania. The grayling is a very ornamental species, the prevailing hue of the body being of a pale yellowish brown, finely varied by reflections of golden green, and copper colour. But the most marked and peculiar feature is the dorsal fin, of very large size, and darkly spotted between the rays in the form of transverse bands. The ordinary size is from ten to sixteen inches, but individuals are killed occasionally which weigh three, four, or even five pounds. Unlike the other salmonidæ, it does not spawn till spring, and is therefore in high condition in autumn and winter, when most fresh-water fishes are out of season. By some authors the grayling is regarded as a migratory fish, which passes most part of the winter in the open sea, and resides only during spring and summer in the fresh waters. Whatever may be the case in continental countries, its habits are otherwise in the rivers of our sea-girt isle, where—during November—it attains its best condition. Besides, Sir Humphrey Davy found by experiment that this species could not outlive the effects of even brackish water.

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* *Thymallus vulgaris*, Cuv.—*Salmo thymallus*, Linn.

† Since the publication of the former edition of the present work we have visited the Orkney Islands, but, as we anticipated, could find no trace, either ocular or historical, of the existence of the grayling.

The grayling is a bold and sportive fish, but more tender in the mouth than the trout. It rises well to what is called the camlet-fly, and to several other of the smaller sized trout-flies. It seems rather fond of game, at least has no objection to a moorfowl wing, and hare-ear body, and may be angled for successfully with the caddis-worm, and other ground baits.

Although the natural history of the gwyniad or fresh water herring, called *Schelly* in Cumberland, of the vendace of the Loch Maben district, and the pollan of Ireland, presents many points of interest to the student of Ichthyology, yet as these are not, strictly speaking, anglers' fishes, we must leave them unrecorded in our present volume. For the same reason the varied and invaluable tribes of marine species, from the slender bodied silvery smelt to the gigantic cod-fish, and far expanded skate, can claim no portion of the angler's time, except when sounds—

> "That Tocsin of the soul, the dinner bell."

We shall, therefore, conclude this portion of our volume by setting a few lines for eels.

Reader, are you fond of eels? We ourselves dislike them in all their stages, whether on hook or table; and yet kind Mrs ——— of Linlithgow, sends us some every year from the Loch of that name, beneath "The Royal House of Scotland's ancient Kings." With our accustomed liberality, however, and setting aside for the present our own personal feelings on this slimy subject, we agree with Mr. Yarrell that eels are in truth a valuable kind of fish, being extremely prolific, consequently very abundant, widely distributed, easily caught—except with the hand—and nutritious as an article of food, though somewhat heavy from their oily nature. "In this country they inhabit almost all our rivers, lakes, and ponds; they are in great esteem for the table, and the consumption in our large cities is very considerable. The London market is principally supplied from Holland by Dutch fishermen. There are two companies in Holland, having five vessels each: their vessels are built with a capacious well, in which large quantities of eels are preserved alive till wanted. One or more of these vessels may be constantly seen lying off Billingsgate: the others go to Holland for fresh supplies, each bringing a cargo of 15,000 to 20,000 pounds weight of live eels, for which the Dutch merchant pays a duty of £13 per cargo for his permission to sell. Eels and salmon are the only fish sold by the pound weight in the London market."*

Their snake-like aspect and other reptile attributes, no doubt tend to form and perpetuate the prejudice which many otherwise humane-minded men cherish towards these insidious fishes. They move about on land with great facility, and with a motion resembling that of serpents. They have even been seen to leave fresh water lakes during the night in considerable numbers, apparently for the purpose of preying on slugs and snails among the dewy herbage. They abound in many continental rivers, and are caught in immense numbers in those which empty themselves into the Baltic, where they form a considerable article of trade. It is stated that 2000 have been caught at a sweep in Jutland, and 60,000 have been taken in the Garonne by one net in a single day. Cambridgeshire is still famous for its eels, and the isle of Ely, according to some authorities, was so called in consequence of its being the place from whence the Kings of England were anciently supplied with these fishes. "Here I hope," says old Fuller in his *Worthies*, "I shall not trespass upon gravity, in mentioning a passage observed by the reverend professor of Oxford, Dr. Prideaux, referring the reader to him for the author's attesting the same. When the priests in this part of the country would still retain their wives, in despight of whatever the pope or monks would doe to the contrary, their wives and children were miraculously turned all into eels (surely the great into *Congers*, the less into *Greggs*), whence it had the name of Ely. I understand him, a LIE of EELS." Very likely.

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* British Fishes, vol. ii. p. 285.

The habits of these fishes in relation to breeding, migration, &c., are still but obscurely known. "That eels migrate towards brackish water," observes Mr. Jesse, "in order to deposit their ova, I have but little doubt, for the following reasons: From the month of November until the end of January, provided the frost is not very serious, eels migrate towards the sea. The Thames fishermen are so aware of this fact, that they invariably set their pots or baskets with their mouths up stream during those months, while later in spring and summer they are set down stream. The best time, however, for taking eels, is during their passage towards the sea. The eel-traps, also, which are set in three different streams near Hampton Court (the contents of which, at different times, I have had opportunities of examining), have invariably been supplied with eels sufficiently large to be breeders, during the months I have mentioned. This migratory disposition is not shewn by small eels; and it may therefore be assumed that they remain nearly stationary till they are old enough to have spawn. I have also ascertained that eels are taken in greater or lesser numbers during the months of November or December, all the way down the river to the brackish water. From thence the young eels migrate, as soon as they are sufficiently large and strong to encounter the several currents of the river, and make their way to the different contributary streams. I have also been able to trace the procession of young eels, or as it is here called, the *eel-fair*, from the neighbourhood of Blackfriar's Bridge, as far up the river as Chestrey, although they probably make their way as far, or farther than Oxford. So strong, indeed, is their migratory disposition, that it is well known few things will prevent their progress, as even at the locks at Teddington and Hampton, the young eels have been seen to ascend the large posts of the flood-gates, in order to make their way, when the gates have been shut longer than usual. Those which die stick to the posts, others, which get a little higher, meet with the same fate, until at last a sufficient layer of them is formed to enable the rest to overcome the difficulty of the passage. A curious instance of the means which young eels will have recourse to, in order to perform their migrations, is annually proved in the neighbourhood of Bristol. Near that city there is a large pond, immediately adjoining which is a stream; on the bank between these two waters a large tree grows, the branches of which hang into the pond. By means of these branches the young eels ascend into the tree, and from thence let themselves drop into the stream below, thus migrating to far distant waters, where they increase in size and become useful and beneficial to man. A friend of mine, who was a casual witness of this circumstance, informed me that the tree appeared to be quite alive with these little animals. The rapid and unsteady motion of the boughs did not appear to impede their progress."*

The generality of writers on this subject state that eels perform two migrations every year,—one during autumn towards the sea, another in spring or early summer from it. It is the adult eels which perform the autumnal journey, for the purpose, it is believed, of depositing their spawn (and it is the opinion of many that these never again return up the rivers), while the spring migration seems to be confined to the smallest eels. "The passage of countless hundreds of young eels has been seen and described as occurring in the Thames, the Severn, the Parrett, the Dee, and the Ban. I am, however, of opinion that the passage of adult eels to the sea, or rather to the brackish water of the estuary, is an exercise of choice and not a matter of necessity, and that the parent eels return up the river as well as the fry. All authors agree that eels are extremely averse to cold. There are no eels in the arctic regions,—none in the rivers of Siberia, the Wolga, the Danube, or any of its tributary streams; yet the rivers of the southern parts of Europe produce four species.

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* *Gleanings in Natural History.* Second Series.

There is no doubt that fishes in general, and eels in particular, are able to appreciate even minute alterations in the temperature of the water they inhabit. The mixed water they seek to remain in during the colder months of the year is of a higher temperature than the pure fresh water of the river, or that of the sea. It is a well known law of chemistry, that when two fluids of different densities come in contact, the temperature of the mixture is elevated for a time in proportion to the difference in density of the two fluids, from the mutual penetration and condensation. Such a mixture is constantly taking place at the mouths of rivers that run into the sea, and the mixed water maintains a temperature two degrees warmer than that of the river or the sea. This elevation in the temperature of the water of estuaries and the mouths of rivers is, I have no doubt, one reason why they in general abound in young fish."*

As we have ourselves more than once ascertained that eels have bred in fresh water ponds, from which they were debarred all access to the sea, we infer that their descent to the brackish water, though customary, is not indispensable.† These fish sometimes attain to a great size;—the most common species, called the sharp-nosed eel (*Anguilla acuti-*

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* *Ibid.*

† In illustration of this vexed question regarding the migration of eels to the sea, we extract the following paragraphs from a letter, (dated 8th December 1843), from our valued correspondent, Mr. Andrew Young, Invershin, the manager of the Duke of Sutherland's fisheries in the north of Scotland.

"The subject of my present communication is the history of our sharp and broad-nosed eels, at all times inhabitants of our fresh water rivers, and not of migratory habits as so generally supposed. You are aware that the eel fair, or eel fry, as it is called, happens sometime in April or May, depending altogether on the weather.

If we have good weather in April, then we have the eel fry ascending in April, but if the weather be cold and coarse, the fry do not rise from their beds before May.

"On the 28th of April 1842, the fry were rising from the banks, and ascending the river Shin in great numbers, with an average length of about a couple of inches, some being rather more and some rather less,—a variation which we find in the fry of all other fishes. I got a pond constructed, and secured a number of them there by means of very fine wire-grating. They continued in fine condition, and grew fast during all the summer months, in the course of which they became so familiar, in consequence of frequent visits, that they would gather round the gut of a fish, and feed with the greatest deliberation.

"On the approach of winter they entirely disappeared, and during the course of that season I deemed that my favourites were entirely lost, as no vestige of them could be seen. But to my astonishment returning spring brought the whole family from their winter quarters, (viz, holes in the sides of the pond), and we soon got as familiar as we were during the previous summer. I fed them frequently as before, and their growth was extraordinary, while it proved, at the same time, that fresh water is their proper element. On the 21st of October 1843, I had the pond emptied that I might procure a specimen. The one I took, and have preserved in spirits, was neither the largest nor the smallest. It measured two feet in length, and was of proportional thickness. The others are still in the pond, but have disappeared since the termination of the summer season.

"Another instance which has fallen under my notice, affords additional proof that eels do not migrate to the sea. I was excavating or clearing away a large gravel bank that had formed in the channel of the river Shin, and in the course of this operation we turned up numerous *beds* in which eels had spawned, and where the young were swarming all alive about the size of pins. But they were by no means so active as they are in spring, after they have risen naturally from the spawning beds.

"I am, therefore, perfectly convinced that our river eels never leave the rivers, but that they spawn in fresh water gravelly banks, with a mixture of mud, in the course of the summer season:—that *rostris*, Yarrell), has been taken near Cambridge, of the weight of 27 pounds.

In relation to their mode of capture by the angler a few words will suffice. As the habits of eels are nocturnal, the largest and finest are usually caught with night lines. They are a troublesome fish, from their great tenacity of life, and the tortuous motions by which, in their natural enough endeavours to disengage themselves, they entangle or destroy the

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the spawn becomes vivified in the following September and October; that the young remain, as it were entombed, (as are also the parents,) all winter, and ascend through the gravel in April or May, according to the fineness of the season; and that in the course of seventeen months thereafter, they measure in length from 18 to 26 inches.

"During last June and July our rivers were extremely low, so that from the top of the high banks we could see the bottom of almost every pool. In one particular pool below the cruives, I watched the eels from day to day, and could see them leaving the deeper water, and traversing the shallower banks, nearly after the fashion of salmon in their spawning season. There were hundreds of adult eels in the pool at this time, and I am perfectly convinced that they were then in the act of spawning."

These are interesting and important observations, and we deem them conclusive so far as concerns the locality in question, which, though at a great distance from the open sea, is not far from the mingled waters of an estuary. We must, therefore, bear in mind that the mouth of the Shin itself, (where Mr. Young rejoices in the dwelling-house of *Inver*shin,) though entirely fresh, is yet under the influence of ebb and flow from the impulsive action of the tides, and that the question with most naturalists now is, not whether eels at certain periods evanish in the sea, but whether they do not at those periods descend from the colder and higher waters of the interior towards, if not into, the warmer and lower waters of estuaries and river mouths? According to some people's views, the pool alluded to by Mr. Young may possibly be looked upon, even *a priori*, as the very place where a sensible and considerate eel would desire to pass the winter with his family.

angler's tackle. In rivers their natural haunts are under large stones and in the clefts of banks, while in lakes they affect weedy places and the muddy bottom of indented bays. They are usually angled for with a worm, but they may also be speared successfully at an early hour in clear still summer mornings, from a boat in bays, when they have entered their hiding places in the mud. We believe, however, it may without calumny be said of eels in general, that they afford but slight amusement to those accustomed to the more elegant and skilful branches of the art.

The kind called *Congers* are marine species of great size and extreme voracity. The common conger eel (*Conger Vulgaris*, Cuv.—*Muræna Conger*, Linn.) has been known to attain the length of ten feet, and to weigh above 120 pounds. With these dimensions, superadded to strong jaws and sharp tenacious teeth, they are apt to prove very ugly customers; and mothers are hereby warned not to allow children under ten years old to angle for them from the extremity of jutting rocks. Even full-grown fishermen are said to dread injury to their legs from a large conger twining around them. This species has even been known to attack men while swimming.

It has sometimes been found within the carcase of large dead animals, on which it was evidently feeding. Mr. Yarrell took from the body of a conger weighing 25 pounds, three common dab, and another conger three feet long. In the Orkney Islands, congers are often killed by otters, and as these quadrupeds usually devour only a portion of their prey, the country people who know their haunts thus reap a frequent fishy harvest. The best bait for this kind of eel is the sand launce. The Cornish fishermen use the pilchard for the same purpose.

We have now no more to say of fishes, but shall conclude by hoping from our heart that every angler's lines may fall in pleasant places.

LIST OF BOOKS

ON ANGLING,

REFERRED TO AT PAGE SEVENTH OF THE PRESENT VOLUME.

THE TREATISE OF FYSSHINGE WITH AN ANGLE, by DAME JULIANA BARNES or BERNERS. This is the earliest printed Work on Angling in the English language. It forms part of the *Book of St. Alban's, emprented at Westmestre by Wynken de Worde* in 1496. It is less useful to the Angler than curious in the eyes of the Bibliographer.

HAWKING, HUNTING, FOULING, and FISHING, with the True Measures of BLOWING, &c. now newly collected by W. G. FAUKENER. 4to, Lond. 1596.

A BOOK OF FISHING WITH HOOKE AND LINE, and of all other Instruments thereunto belonginge, made by L. M. 4to, Lond. 1590. This Work contains Remarks on the Preservation of Fish in Pools, and some Improvements on the Directions of the "Religious Sportswoman," Juliana Barnes. L. M. signifies LEONARD MASCALL.

A NEU BOOK OF GOOD HUSBANDRY ; very pleasaunt, and of great Profite, both for Gentlemen and Yeomen ; conteining the Order and Maner of Making of Fish-Pondes, with the Breeding, Preseruing, and Multiplyinge of the Carpe, Tench, Pike, and Troute, and diverse kindes of other Fresh Fish. Written in Latine by JANUS DUBRAUIUS, and translated into English at the speciale request of GEORGE CHURCHEY, Fellow of Lion's Inne, the 9th Februarie 1599. 4to, Lond. 1599.

CERTAIN EXPERIMENTS CONCERNING FISH AND FRUIT ; Practised by JOHN TAVERNER, Gentleman, and by him published for the benefit of others. 4to, Lond. 1600.

THE SECRETS OF ANGLING ; teaching the Choicest Tooles, Baytes, and Seasons for the taking of any Fish in Pond or River ;

Practised and familiarly opened in Three Bookes. By J. D., Esquire. 8vo, Lond. 1613. The author of this Work is named in the third edition of Walton's Angler as one Jo. Davors; but, from an entry in the Books of Stationers' Hall, as given in the second volume of "British Bibliography," p. 355, he is mentioned as John Dennys, Esquire. Large extracts from this Work are given by Sir Egerton Brydges, in the last volume of his *Censura Literaria.* The poetry, of which several passages are quoted by Walton, is remarkable for its beauty.

THE PLEASURES OF PRINCES, OR GOOD MEN'S RECREATIONS; containing a Discourse of the General Art of Fishing with the Angle, or otherwise, and of all the Hidden Secrets belonging thereunto; together with the Choyce, Ordering, Breeding, and Dyetting of the Fighting Cocke; being a Worke never in that nature handled by any former author. Lond. 1614, 4to. This treatise forms part of the second book of the English Husbandman, by G. M. (Gervais Markham.)

A BRIEFE TREATISE OF FISHING, WITH THE ART OF ANGLING. Lond. 1614, 4to. This volume is little else than a reprint from a portion of the Book of St. Alban's, and forms part of the Jewell for Gentrie, by T. S.

CHEAP AND GOOD HUSBANDRY; by Gervais Markham, 4to, Lond. 1616. This Work contains a Chapter on Fish and Fish-Ponds.

COUNTRY CONTENTMENTS; OR THE HUSBANDMAN'S RECREATIONS: by J. M. In the fifth and sixth editions of this volume (4to, Lond. 1633 and 1639), will be found the Whole Art of Angling, as it was written in a small treatise in rime, and now, for the better understanding of the reader, put into prose, and adorned and enlarged. This is a prose version, with additions, of Davors' Secrets of Angling.

THE COUNTRY GENTLEMAN'S COMPANION, 2 vols. 12mo, Lond. 1753, is a reprint, without acknowledgement, of Markham's work.

THE ART OF ANGLING; wherein are discovered many rare secrets very necessary to be known by all that delight in that recreation, written by Thomas Barker, an antient practitioner in the said art. 12mo, Lond. 1651. In an epistle to the reader prefixed to the first edition, and in the dedication of the two last to Edward Lord Montague, Barker speaks of himself as having practised Angling for more than half a century. He also says he was born and educated at Bracemeall, in the liberty of Salop, being a freeman and burgesse of the same city ; adding, " if any noble or gentle angler, of whatever degree soever he be, have a mind to discourse of any of these wayes and experiments, I live in Henry the 7th's Gifts, the next doore to the Gatehouse, in Westm. My name is Barker, where I shall be ready, as long as please God, to satisfye them, and maintain my art during life, which is not like to be long." See British Bibliography, by Sir Eg. Bridges and Joseph Haselwood, vol. ii. p. 356.

THE COMPLEAT ANGLER, OR THE CONTEMPLATIVE MAN'S RECREATION ; being a discourse of Fish and Fishing, not unworthy the perusal of most anglers. 12mo. Lond. 1653. This is the first edition of Isaak Walton's celebrated work. It went through five editions during the author's lifetime ; and in the course of its republication was enlarged and improved. The fifth edition forms the first part of the Universal Angler, by Walton, Cotton, and Venables, 12mo, Lond. 1676 ; and is accompanied by a *second part* (written by Cotton), which treats more fully of fly-fishing. The sixth and seventh editions were published in 1750 and 1759, by Moses Browne, author of the Piscatory Eclogues and other works. The eighth edition was published by Sir John Hawkins in 1760, and has been succeeded by many others since that period, of which one of the most recent and most beautifully adorned is that by John Major, with an introductory essay and illustrative notes. 8vo, Lond. 1823.

THE THIRD EDITION OF THE COMPLEAT GENTLEMAN, by HENRY PEACHAM, 4to, Lond. 1661, contains a chapter concerning Fishing.

THE EXPERIENCED ANGLER, OR ANGLING IMPROVED ; being a general discourse of Angling. 8vo, Lond. 1662. This work, of which there are several editions, is by Colonel ROBERT VENABLES. Its fourth edition forms the third part of the Universal Angler.

ANGLING IMPROVED TO SPIRITUAL USES, forms part of an octavo volume entitled Occasional Reflections upon several Subjects, by the Hon. ROBERT BOYLE. 8vo, Lond. 1665.

In a volume called THE EPITOME OF THE ART OF HUSBANDRY, by J. B. Gent. 12mo, Lond. 1669, are brief experimental directions for the right use of the angle. The author's name was Blagrave.

THE ANGLER'S DELIGHT; containing the whole Art of Neat and Clean Angling; wherein is taught the readiest way to take all sorts of Fish, from the Pike to the Minnow, together with their proper baits, haunts, and time of fishing for them, whether in mere, pond, or river. As also the method of fishing in Hackney River, and the names of all the best stands there; with the manner of making all sorts of good tackle fit for any water whatsoever. The like never before in print. By WILLIAM GILBERT, Gent. 12mo, Lond. 1676.

THE COMPLEAT TROLLER, OR THE ART OF TROLLING, by ROBERT NOBBES. 8vo, Lond. 1682. There are several editions of this work, of which the third and fourth are appended to the Angler's Pocket-Book.

GENTLEMAN'S RECREATIONS; treating of the Art of Horsemanship, Hunting, Fowling, Fishing, and Agriculture. Fol. Lond. 1686.

THE GENTLEMAN'S RECREATION, in four parts, viz. Hunting, Hawking, Fowling, Fishing. 8vo, Lond. 1674. (By NICHOLAS COX.)

THE ANGLER'S VADE MECUM, OR A COMPENDIOUS YET FULL DISCOURSE OF ANGLING. By T. CHEETHAM. 8vo, Lond. 1681.

NORTHERN MEMOIRS, calculated for the meridian of Scotland; wherein most or all of the Cities, Citadels, Seaports, Castles, Forts, Fortresses, Rivers, and Rivulets, are compendiously described; to which is added, the Contemplative and Practical Angler, by way of diversion; with a Narrative of that dextrous and mysterious Art experimented in England, and perfected in more remote and solitary parts of Scotland; by way of Dialogue: writ in the year 1658, but not till now made public. By RICHARD FRANK, Philanthropus. 8vo, Lond. 1694. Of this curious volume a reprint was published of late years.

THE TRUE ART OF ANGLING, by J. S. 24to, Lond. 1696.

THE COMPLEAT FISHER, OR THE TRUE ART OF ANGLING, by J. S., third edition, 1704. The preceding work, revised and corrected by W. WRIGHT and other experienced anglers, was republished in 1740.

THE COMPLEAT FISHERMAN, being a large and particular account of all the several ways of Fishing now practised in Europe ; by JAMES SAUNDERS, Esq. of Newton-Awbery, upon Trent. 12mo, Lond. 1724.

THE GENTEEL RECREATION, OR THE PLEASURE OF ANGLING ; a Poem : with a Dialogue between Piscator and Corydon. By JOHN WHITNEY, a lover of the angle. 8vo, Lond. 1700.

THE SCHOOL OF RECREATION, OR A GUIDE TO THE MOST INGENIOUS EXERCISES ; by R. H. 8vo. Lond. 1701.

THE SECRETS OF ANGLING ; by C. G. 12mo, Lond. 1705.

THE ANGLER'S SURE GUIDE, OR ANGLING IMPROVED AND METHODICALLY DIGESTED : by R. H. Esq. 8vo, Lond. 1706.

THE INNOCENT EPICURE, OR THE ART OF ANGLING ; a Poem. 8vo, Lond. 1697.

THE WHOLE ART OF FISHING ; being a Collection and Improvement of all that has been written on this subject ; with many New Experiments. 12mo, Lond. 1714. The second edition of this Work is entitled the Gentleman Fisher, or the Whole Art of Angling. 8vo, Lond. 1727.

A DISCOURSE OF FISH AND FISH-PONDS ; by a PERSON OF HONOUR. 8vo, London. The author of this Work was the Hon. ROGER NORTH. A subsequent edition (of which there were more than one) bears the date of 1713. It was also published as an appendage to the Gentleman Farmer. 8vo, Lond. 1726.

THE COUNTRY GENTLEMAN'S VADE MECUM ; by G. JACOB, Gent. 8vo, Lond. 1717 ; and the COMPLEAT SPORTSMAN, by the same author (1718), of which the 3d part relates to Fish and Fishing.

ENGLAND'S INTEREST, OR THE GENTLEMAN AND FARMER'S FRIEND ; by SIR JOHN MOORE. 8vo, Lond. 1721.

THE GENTLEMAN ANGLER. Lond. 1726.

PISCATORY ECLOGUES ; (by MOSES BROWNE.) 8vo, Lond. 1729. Of this Work there are several editions.

SPORTSMAN'S DICTIONARY, OR THE GENTLEMAN'S COMPANION IN ALL RURAL RECREATIONS. 2 vols. 8vo, 1735.

THE BRITISH ANGLER, OR A POCKET COMPANION

FOR GENTLEMEN FISHERS; by JOHN WILLIAMSON, Gent. 8vo, London, 1740.

THE ART OF ANGLING, ROCK AND SEA FISHING; with a Natural History of River, Pond, and Sea Fish: by R. BROOKES. 8vo, Lond. 1740. Of this treatise there have been various reprints, at different periods, up to the year 1807.

ANGLING, a Poem. 12mo, Lond. 1741, 2d Edit.

THE ART OF ANGLING IMPROVED IN ALL ITS PARTS, ESPECIALLY FLY-FISHING, by RICHARD BOWLKER, 12mo. Worcester. Published some time preceding the year 1759. There is a recent edition (1806) by Charles Bowlker, Ludlow.

THE ANGLER'S MAGAZINE, OR NECESSARY AND DELIGHTFUL STORE HOUSE; wherein every thing proper to be known relating to his art is digested in such a method as to assist his knowledge and practice upon bare inspection; being the completest manual ever published upon the subject, largely treating of all things relating to Fish and Fishing, and whereby the Angler may acquire his experience without the help of a master. By a lover of that innocent and healthful diversion. 12mo, Lond. 1754.

THE ANGLER'S EIGHT DIALOGUES, in Verse. 8vo, Lond. 1758.

THE ART OF ANGLING; Eight Dialogues in Verse. 8vo.

THE UNIVERSAL ANGLER, OR THAT ART IMPROVED IN ALL ITS PARTS, ESPECIALLY IN FLY-FISHING, 8vo, Lond. 1766.

THE COMPLETE SPORTSMAN, OR COUNTRY GENTLEMAN'S RECREATION, by THOMAS FAIRFAX. 8vo, Lond.

THE COMPLETE FISHERMAN, OR UNIVERSAL ANGLER. 8vo, Lond. (2d edit.) Lond. 1778.

THE ANGLER'S COMPLETE ASSISTANT; being an Epitome of the Whole Art of Angling. 4th edit. 4to, London.

THE TRUE ART OF ANGLING. 12mo, Lond. 1770.

TRANSLATION OF A LETTER FROM THE HANOVER MAGAZINE, No. 23, March 21, 1763; giving an account of a Method to Breed Fish to advantage. 8vo, Lond. 1778.

THE ANGLER'S MUSEUM, OR THE WHOLE ART OF FLOAT AND FLY FISHING, by THOMAS SHIRLEY. 12mo, Lond. 1784.

THE FISHERMAN, OR ART OF ANGLING MADE EASY, by Guiniad Charfey, Esq. 8vo, London.

THE NORTH COUNTRY ANGLER, OR THE ART OF ANGLING, as practised in the Northern Counties of England. 8vo, Lond. 1786.

A CONCISE TREATISE ON THE ART OF ANGLING, by Thomas Best, Gent. 8vo, Lond. 1787. Of this Work there have been published many editions, of which the 9th is dated 1810.

AN ESSAY ON THE RIGHT OF ANGLING IN THE RIVER THAMES, and in all the other Public Navigable Rivers. 8vo, Reading.

A LETTER TO A PROPRIETOR OF A FISHERY IN THE RIVER THAMES; in which an attempt is made to show in whom the Right of Fishing in Public Streams now resides. 2d edit. 8vo, Reading, 1787.

THE NATURAL HISTORY OF FISHES AND SERPENTS, by R. Brookes; to which is added an Appendix, containing the whole Art of Float and Fly Fishing. 8vo, London, 1790.

THE YOUNG ANGLER'S POCKET COMPANION, by Ralph Cole, Gent. 12mo, London, 1795.

THE MODERN ANGLER, being a Practical Treatise on the Art of Fishing, &c. in a series of Letters to a Friend; by Robert Salter, Esq. 12mo, London.

ANGLING IN ALL ITS BRANCHES REDUCED TO A COMPLETE SCIENCE, in three Parts, by Samuel Taylor, Gent. 8vo, London, 1800.

EVERY MAN HIS OWN FISHERMAN, by Thomas Smith. 24mo, London.

THE DRIFFIELD ANGLER, in Two Parts, by Alexander Mackintosh of Great Driffield, Yorkshire. 8vo, Gainsborough.

THE ANGLER'S POCKET BOOK; to which is prefixed Nobbe's celebrated Treatise on the Art of Trolling. 8vo, Norw.

THE NEW AND COMPLETE ANGLER, or UNIVERSAL FISHERMAN, by Richard Pollard, Esq. of Clapton, Middlesex. 8vo, London, 1802.

RURAL SPORTS, by W. B. Daniel. 4to, London, 1802. Part of vol. ii. relates to Fly-Fishing, and the other kinds of Angling.

THE KENTISH ANGLER, or THE YOUNG FISHERMAN'S INSTRUCTOR; showing the Nature and Properties of Fish which are angled for in Kent. 12mo, Canterb. 1804.

THE COMPLETE ANGLER'S VADE MECUM; being a perfect Code of Instruction on the above pleasing Science, &c., by Captain T. WILLIAMSON. 8vo, London, 1808.

THE ANGLER'S MANUAL, or CONCISE LESSONS OF EXPERIENCE, which the Proficient in the delightful Recreation of Angling will not despise, and the learners will find the advantage of practising; containing useful Instructions on every approved method of Angling, and particularly on the Management of the Hand and Rod in each Method. 4to, Liverpool, 1808.

THE FISHER'S BOY, a Poem, by W. H. IRELAND. 8vo, 1808.

THE ANGLER'S MANUAL, or CONCISE LESSONS OF EXPERIENCE, &c. 8vo, 1809.

VANIER'S BOOK XV., upon Fish, translated with an Introduction and Notes, by the Rev. JOHN DUNCOMBE. 4to, 1809.

PRACTICAL OBSERVATIONS ON ANGLING IN THE RIVER TRENT. 12mo, 1812.

HOWITT'S FOREIGN FIELD SPORTS, FISHERIES, &c. 4to, 1814.

THE SECRETS OF ANGLING, by J. D. (DAVORS); augmented by W. LAWSON. 8vo, 1814.

THE ANGLER'S GUIDE, by T. F. SALTER. 8vo, 1815,

ART OF ANGLING, by CHARLES BOWLKER. 12mo, 1815.

THE FLY-FISHER'S GUIDE, by G. C. BAINBRIDGE. 8vo, 1816.

PISCICEPTOLOGIE, ou l'art de la Peche à la ligne, aux filets, et autres instrumens, par J. C. 12mo, with 28 plates, Paris, 1816.

W. H. SCOT'S BRITISH FIELD SPORTS. Royal 8vo, 1818.

THE ANGLER'S VADE MECUM, by W. CARROLL. 12mo, 1818.

LE PECHEUR FRANCAIS A LA LIGNE ET AUX FILETS EN EAUX DOUCE. Par M. KRESZ, Pecheur pendant 30 ans, 12mo, with 23 plates, Paris, 1818.

SPORTSMAN'S REPOSITORY, by J. SCOTT, 1820.

THE TROLLER'S GUIDE, a new and complete Practical Treatise on the Art of Trolling for Jack and Pike; to which is added, the Best Method of Baiting and Laying Lines for large Eels. By

T. F. Salter, author of the angler's Guide. Small 8vo, London, 1820.

WOHLERFAHRENE FISCHERMEISTER, (in German)—the experienced Fisherman, or complete Instructions in the Art of Fishing by line and net, and crab and frog catching, with directions for stuffing and preserving. By D. J. Tschreiner. 8vo, with 24 plates, Pesth, 1821.

INSTRUCTIONS TO YOUNG SPORTSMEN, by Lieutenant-Colonel Hawker. Royal 8vo, 1824.

SALMONIA, or DAYS OF FLY-FISHING; by an Angler (Sir Humphrey Davy.) 12mo, London, 1828.

PISCATORIAL REMINISCENCES AND GLEANINGS, by an old Angler (Pickering), with the most complete catalogue of books on Angling ever published. fcap. 8vo, with cuts, London, 1833.

ANGLER IN WALES, or DAYS AND NIGHTS OF SPORTSMEN, TALES, TRADITIONS, &c., by Captain Medwin. 2 vols. 8vo, plates, London, 1834.

ANGLER IN IRELAND, or RAMBLES THROUGH CONNAUGHT AND MUNSTER. 2 vols. 8vo, plates, London.

TROUT AND SALMON FISHING IN WALES, by George Agar Hansard. London, 1834.

SCENES AND RECOLLECTIONS OF FLY-FISHING IN NORTHUMBERLAND, CUMBERLAND, AND WESTMORLAND, by Stephen Oliver the younger, of Aldwork, in Com. Ebor. London, 1834.

THE ANGLER'S SOUVENIR, by P. Fisher, Esq., assisted by several eminent Piscatory characters, with Illustrations by Beckwith and Topham. London, 1835.

THE FLY-FISHER'S ENTOMOLOGY, illustrated by coloured representations of the natural and artificial insect. By Alfred Ronalds. London, 1836.

THE TRUE ENJOYMENT OF ANGLING, by H. Phillips, Esq. Post 8vo, London.

AN ANGLER'S RAMBLES, by E. Jesse, Esq. F. L. S. Post 8vo, London, 1836.

THE ART OF ANGLING AS PRACTISED IN SCOTLAND, by Thomas Tod Stoddart, Esq., author of the "Death Wake," and other Poems. Edinburgh, 1836.

ANGLING REMINISCENCES, by THOMAS TOD STODDART, Esq., author of the "Death Wake," the "Scottish Angler," &c. Edinburgh, 1837.

THE SPORTSMAN'S DIRECTORY, being instructions in Hunting, Coursing, Shooting, Fishing, &c. By JOHN MAYER. 12mo, London, 1838.

THE BRITISH ANGLER'S MANUAL, or THE ART OF ANGLING IN ENGLAND, SCOTLAND, WALES, AND IRELAND, with some account of the principal Rivers, Lakes, and Trout Streams in the United Kingdom, with Instructions in Fly Fishing, Trolling, and Angling at the bottom, and more particularly for the Trout, by T. C. HOFLAND, Esq. embellished with Engravings. London, 1839.

THE ANGLER'S POCKET-BOOK. London, 1839.

THE ANGLER'S DESIDERATUM, containing directions for dressing the artificial fly, with some new and valuable instructions by the author, from a practice of nearly half a century. Edinburgh, 1839.

MAXIMS AND HINTS FOR AN ANGLER; AND MISERIES OF FISHING. By RICHARD PENN, Esq. F. R. S. London, 1839.

ON RIVER ANGLING FOR SALMON AND TROUT, more particularly as practised in the Tweed and its tributaries, by JOHN YOUNGER, St. Boswell's. Edinburgh, 1840.

AN ENCYCLOPÆDIA OF RURAL SPORTS, or a complete account, historical, practical, and descriptive, of Hunting, Shooting, Fishing, Racing, &c. By DELABERE P. BLAINE, Esq. London, 1840.

DAYS AND NIGHTS OF SALMON FISHING IN THE TWEED, with a short account of the Natural History and Habits of the Salmon, instructions to Sportsmen, anecdotes, &c., by W. SCROPE, Esq. F. L. S. Royal 8vo, London, 1843.

The preceding extensive list will probably suffice for the instruction and guidance of the most studious angler. Those who are curious in regard to bibliographical details concerning the different editions of the earlier works, may consult a *Catalogue of Books on Angling*, 8vo, 1811, published by Sir Henry Ellis of the British Museum, and originally printed in the *British Bibliographer*.

SHOOTING.

BY THE AUTHOR OF

"THE OAKLEIGH SHOOTING CODE."

ADVERTISEMENT.

Since the article "Shooting," written for the current edition of the "Encyclopædia Britannica," was published in that work, the "Oakleigh Shooting Code" has been withdrawn as a separate publication; but so much of it as was deemed worth preserving has been embodied in the treatise from the Encyclopædia, which is now re-published, with large additions, in the following pages.

1st October, 1840.

Of men
The happiest he, who far from public rage,
Deep in the vale, with a choice few retired,
Drinks the pure pleasures of the rural life.

* * * * *

Rich in content; in Nature's bounty rich,
In herbs and fruits; whatever greens the spring,
When heaven descends in showers; or bends the bough
When summer reddens, and when autumn beams;
Or in the wintry glebe whatever lies
Concealed!—

The Seasons, Autumn.

INTRODUCTION.

THAT his book might have its hero and scene of operations, the author in his former work drew a sportsman, a manor-house, and a manor. The sportsman was—and how could he be otherwise? —what Wordsworth somewhere calls

> "A lover of the meadows, and the woods,
> And mountains"———

who rhapsodized on purple heaths, like a true Highlander. He dwelt in the centre of his own domain, where, in a richly wooded and craggy dell, stood the Oakleigh old Manor-Hall, "a vast and venerable pile," begrimed by the dusty hand of Time, but crumbling not beneath his mouldering touch. It presented a rude mass of Gothic Masonry, whose "stony strength" had laughed "a siege to scorn!"

Not far from the Manor-hall reposed, in primeval simplicity, the secluded village of Oakleigh. As the houses there were remarkable for their uniform antiquity, so the people and the trees, the vicar's rooks and the "steeple daws," were notorious for their longevity. Had a village Rip van Winkle of 1680 been aroused from his century and a half of slumber, and placed on the steps of the tavern, looking up the dell above the green mill-meadows, he would have seen—just as they appeared before the Reformation—the grey old Hall and the heronry behind it!—the deer still browsing in the deep shades of that most umbrageous of parks!—the swans still floating on the miniature lake!—the winged griffins on the columns at the park-gates, still watchful as the dragon that guarded the golden fruit in the orchard of the Hesperides!—the trees and ivy still embowering the lodge!—and, in the distance, the grouse-hills still uninclosed!

Oakleigh was famous for its yews and its hollies —for the large growth and dark foliage of its forest-trees—for its innumerable birds of song—for its rich water-meadows and sunny gardens—for the narrowness and steepness of its lanes—and the height of its hawthorn hedges! From the river to the Hall, the country was an Eden in fertility! but beyond the woods behind and above the Hall, a different clime presented itself: on the one hand a wilderness of heather, and on the other a wide-ranging, treeless view of smooth-turfed limestone hills, studded with white rocks.

A fine old apartment in the Manor-hall had served many purposes. If walls were biographers, curious and eventful would have been the memoirs recorded there. Masses to propitiate success, and *Te Deums* for victories gained, had been celebrated within it. During the wars of the Roses, often into that room, at the sound of the festal gong, had the dancing minstrels—chaunting the "*Caput apri defero!*" ushered in the boar's head "garnished with rosemary," and the steaming haunch, to regale the turbulent partisans of the house of Tudor! And, in aftertimes, the noisy Cavaliers made it resound with laughter at the expense of their puritanical opponents! It was a large, dusky, oak-wainscoted room, wherein but little of sun-light entered, the large Gothic windows being stained with heraldic devices. It was furnished with a variety of antiquarian relics, to which pertained divers superstitious legends, coined in Catholic times for the deception of Protestant posterity; rusty armour, broken lances, housings, bridle-bits and spurs that, in the days of chivalry, glittered in the tournament, Saxon long-bows, arrowless quivers, cross-bows, falchions, antlers, hunting-horns, and fire-arms of every description, from the matchlock of the reign of Hal of Agincourt, down to the well-finished fowling-piece of the successors of Joe Manton. It was furnished as a library also, and the literary contents were as diversified as the warlike. The shelves creaked underneath the loads of learned lumber; there were books of all sorts, including the ancient classics, and the vernacular from the clumsy tomes of antiquarian Dugdale to the dapper type of the last annual. The ancient and the modern were strikingly contrasted, or rather blended, for there was an union of both—of ancient grandeur and of modern luxury—combining at once a baronial, a sporting, and a literary appearance! On the walls were hung the portraits of all the Oakleighs of Oakleigh! fair ladies! mailed warriors! shaven priests! gallant knights! and sturdy squires! amidst an assemblage of hoops, feathers, ruffles, and long swords—and periwigs and queues of every cut, curl, tie, form, and twist.

Conviviality reigned at the old Hall of Oakleigh after the good old English fashion. The hills by day, and the walls by night, reverberated the sportsman's voice. As of yore, in that mansion of other days, the song was sung and the tale was told; Welcome presided; and Mirth and Moderation—two fellows who seemed never to grow old—were rarely absent.

Guests from the South, who annually rusticated at Oakleigh in autumn, not so much to partake of the in-door hospitality of

> That pleasant place of all festivity,

as to share in the sports of the field, the means of enjoying which were there so amply afforded, in times past had been wont to ask a multitude of questions on sporting subjects; which nuisance was at last abated, since the querist was no longer answered, otherwise than by a general reference to the canons of the Oakleigh Shooting Code, which Tom Oakleigh—thus was our sportsman dubbed,—had inscribed on a huge scroll in the Hall of Shields,—the fine old apartment before spoken of,—for the information of all persons unacquainted with the manorial usages and sporting bye-laws of that ancient demesne!

Such was the supposed origin of the Shooting Code, a considerable portion of which has been transferred to these pages.

" In the city, people of different ranks stand scowling and apart ; but when they go to shoot, to fish, or any other sport or occupation in the fields, they are fellows. Nature thus makes brotherhood ; and if all mankind would follow nature, all mankind would be brothers !"—*Mudie.*

SHOOTING.

CHAPTER I.

A RETROSPECTIVE VIEW OF THE WEAPONS OF THE CHASE AND OF SOME OF THE SPORTS AND PASTIMES THAT PRECEDED THE USE OF THE GUN.

The pursuit and destruction of wild animals for security, food, clothing, or pastime, have been among the occupations of men in all ages, since the primeval *bruerė* overspread the earth,

> And wild in woods the noble savage ran!

Before the more refined arts are introduced into any country, the chase is a necessity, and the chief business of life. The stronger and more noxious animals are destroyed for individual safety; the weaker for food. It is not until civilisation and her handmaid luxury have seated themselves, that the chase becomes a pastime. Nor does it appear when the sportsman first sprang into existence. There is no corresponding word in any ancient language, since that could not be called a sport which was a necessity. It is probable that in the earliest ages of society, the dog was the sole agent employed by the hunter. Afterwards various weapons, manual, missile, and projectile—as the club, the dart, the arrow—were used by the hunter and fowler. Then would follow springes, traps, nets, and all that class of devices for the capture of beasts and birds *feræ naturæ*, comprehended in the term toils. As dogs were employed to hunt quadrupeds, so, in process of time, hawks were trained to bring down birds for the service of their master. The arbalist or cross-bow, preceded the matchlock, which, however, could scarcely be called an implement of the chase, but which, in the order of succession, brings us down to the rifle, and original fowling piece with its long heavy barrel, and flint and steel lock; and lastly, we arrive at the double-barrels and detant locks of the modern shooter.

In the days of the Saxon and Norman kings, and long previously, the Britons were famous for their skill in archery, both in war and in the chase. The accuracy of aim and power of projecting an arrow from a bow which they possessed, almost surpasses credibility; and that the manly character of the exercise should not degenerate, laws were enacted interdicting the use of bows under a certain strength, and arrows under a certain length. Physical strength—but it is rather sleight than strength which contributes to success in archery—is accounted honourable among all savage nations; it was always deemed an accomplishment by the nations of antiquity. Homer's heroes are as well known by their physical as their moral and intellectual qualities. Addison makes the crafty Syphax, who is unwilling to acknowledge the inferiority of his countrymen to the Romans, exclaim,—

> Do they with tougher sinews bend the bow ;
> Or flies the javelin swifter to its mark,
> Launch'd by the vigour of a Roman arm ?

The feats of the bow were often introduced into the songs of the Bards of the ancient Britons, and into the ballads of the Troubadours.

Archery is now confined to shooting at the target. Ladies not unfrequently contend for the prize in this elegant amusement. Their bows, however, are not such as were used by the amazons of yore, nor are those of the gentlemen of the archery clubs such as decided the battle of Cressy.

Falconry, coeval with, and subsequent to the decline of archery, occupied that rank in British field sports which is now enjoyed by shooting. Falconry is of high antiquity; but at what time hawks were first trained to the sport does not appear. Aristotle informs us, that "there was a district in Thrace, in which boys used to assemble at a certain time of the year, for the sake of bird-catching; and that the spot was much frequented by hawks, which were wont to appear on hearing themselves called, and would drive the little birds into the bushes, where they were caught."

Martial has the following epigram on the fate of a hawk:—

> Prædo fuit volucrum, famulus nunc aucupis, idem
> Decipit, et captas non sibi, mœrit, aves.

The hawk was originally fastened to a twig or stake, as a decoy to entice birds under the net or to the limed twigs, which, says Pennant, "is a method still in use in Italy. The Italians call it *Uccelare con la civetta;* for, instead of a hawk, they place a small species of owl on a pole, in the middle of a field, and surround it, at various distances, with lime twigs. The small birds, from their strange propensity to approach rapacious fowls, fly around, perch on the rods, and are taken in great numbers. A hawk would serve the purpose full as well."

There is no record of trained hawks previous to the time of Ethelred. Under the Welsh laws of Hoel Dha, (A.D. 940), "the falconer has a privilege the day that the hawk shall kill a bittern, or a heron, or a curlew. Three services shall the king perform for the falconer on such a day; hold his stirrup whilst he dismounts; hold the horse whilst he goes after the birds; and hold his stirrup whilst he mounts again. Three times shall the king that night compliment him at table."

Shakspeare often uses the language of falconry. It is chiefly employed in a scene in the second part of Henry VI., wherein the king, queen, lord protector, and cardinal, are the chief speakers; which gees to prove, that the falconer's terms were, at one time, household words at the English court.

Isaac Walton, the father of anglers, has told the praises of hawking in a conversation between an angler, a hunter, and a fowler, wherein each describes his own craft. Thus the fowler mounts his hobby:—"And first, for the element that I used to trade in is the air—an element of more worth than weight—an element that doubtless exceeds both the earth and the water; for though I sometimes deal in both, yet the air is most properly mine—I and my hawks use that most, and it yields us most recreation; it stops not the high soaring of my noble generous falcon—in it she ascends to such a height, as the dull eyes of beasts and fish are not able to reach to—their bodies are too gross for such elevations: in the air my troops of hawks soar up on high, and when they are lost in the sight of men, then they attend upon and converse with the Gods; therefore, I think my eagle is so justly styled *Jove's servant in ordinary:* and that very falcon, that I am now going to see, deserves no meaner title, for she usually in her flights endangers herself, like the son of Dædalus, to have her wings scorched by the sun's heat, she flies so near it, but her mettle makes her careless of danger; for she then heeds nothing, but makes her nimble pinions cut the fluid air, and so makes her high way over the steepest mountains and deepest rivers, and in her glorious career looks with contempt upon those high steeples and magnificent palaces which we adore and wonder at; from which height I can make her to descend by a word from my mouth, (which she both knows and obeys,) to accept of meat from my hand, to own me for her master, and to go home with me, and be willing the next day to afford me the like recreation." Walton, who seems to have been almost as conversant with hawking as with angling, enumerates twenty kinds of hawks then used, and adds that there were others which he " forbore to mention." He is learned in the phraseology of the day; he speaks of "their ayries, their mewings, rare order of casting, and the renovation of their feathers; their reclaiming and dieting." Mews were places where hawks were kept, as the Mews at Pimlico, on the site of which, or near thereto, stands Buckingham Palace. "The Park," (St James's) says Mr. Evelyn,* "was at this time (A. D. 1664–65) stored with numerous flocks of severall sorts of ordinary and extraordinary wild fowle, breeding about the decoy, which for being neare so greate a city, and among such a concourse of souldiers and people, is a singular and diverting thing."

Hawking was once the occupation only of the great; it afterwards became a more general amusement. The large sums given for superior hawks in the days of the Plantagenets, Tudors, and Stuarts prove the high estimation in which the sport was then held. The falcons of most repute were imported from Iceland and other foreign countries, the various native species being deemed of an inferior description.

Hunting and archery, which were then almost synonymous terms,—for the sport was somewhat similar to deer-stalking, the rifle being now substituted for the bow,—were in high reputation with the Danish, Saxon, and Norman kings, whence arose the forest laws. Wolves and boars, which formerly invested the woods, were nearly exterminated in King Edgar's time, when that monarch prohibited the killing of deer and game in his woods. The punishment depended upon the will of the king, until the celebrated forest laws of Canute, which defined the rights and privileges of the monarch and others; but those laws were little regarded by succeeding kings, whose arbitrary will afterwards regulated the laws of the forest. " Besides other prerogatives of the Saxon kings," says Selden, " they had a franchise for wild beasts for the chase, which we commonly call forest, being a precinct of ground, neither parcel of the county, nor the diocess, nor the kingdom, but rather appended thereto." And these prerogatives, he quaintly observes, were maintained, " that the world might see the happiness of England, where beasts enjoy their liberty as well as men." Another old writer says, that " the *Saxon* Kings and the *Danish* King Canute made no new Forests, but were contented with the Woods that were their own Demesnes, and were never granted to, or possessed by the Subject; but the kings of the *Norman* Race, not being satisfied with sixty-eight old Demesne Woods or Forests, depopulated well-built Towns and Villages, to make to themselves Places appropriated to their own Diversion only. *William* the Conqueror laid waste thirty-six Towns in *Hampshire* to make a Forest, which still retains the Name of the *New Forest;* and his Forest-Officers exercised such arbitrary Rule, as to abridge even the great Barons of the Privileges they enjoyed under the *Saxon* and *Danish* Kings, not at all regarding the Liberties given to the Subject by Canute's Forest laws. His son, *William Rufus*, is recorded in History for the Severity of his Proceedings against all that hunted in his Forests, inflicting the Punishment of Death upon such as killed a Stag or Buck in his Forests, without any other Law than that of his own Will." The killing of deer was punished with loss of sight by William the Conqueror.* William Rufus "did so severely forbid hunting a deer, that it was felony and a hanging matter to have taken a stag or buck."† In Cœur-de-Lion's time, the law was very severe against offenders taking the king's venison; it was even unlawful to carry a bow, or take dogs through a royal forest;—to quote the dog-latin of the day,—"Qui arcus vel sagittas portaverint vel canes duxerint sine copulâ per forestam Regis, et indè attaintus fuerit, erit in miserecordiâ Regis."‡ This, however, did not apply to dogs which had been *expeditated*, that is, "which had three claws of the fore foot cut off by the skin."

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* Diary of John Evelyn, Esq., vol. ii. p. 234.

The forest laws professed to be for the protection of "vert and venison." *Vert* was whatsoever bore green leaves, and afforded food or cover to the deer; and *venison* signified such beasts of the forest or the chase as were the food of man. When reading old books, it is necessary to keep in mind this acceptation of the word venison.

This state of things continued until by the Charta de Forestâ the forest laws were better defined and the penalties mitigated. The vast importance attached to the Forest Charter may be inferred from the fact, that although granted by King John at

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* John Selden.

† William of Malmsbury.

‡ England's Epinomis.

Runnymede, at the same time as the Great Charter, it was not incorporated in it, but was made the subject of a separate and distinct document. The Forest Charter was likewise confirmed by Henry III., contemporaneously with the Great Charter. On the latter occasion the Forest Charter was counter-signed by sixty-four bishops, abbots, and barons; and sentence of excommunication against all persons who should violate it was, with more than usual ceremony, denounced in Westminster Hall, by the archbishop, in the presence of the king, bishops, and nobles, the bishops being robed and bearing torches.

The oath administered, at twelve years of age, to every young man dwelling within the precincts of a royal forest, was in the following rhymes:

You shall true Liege-Man be
Unto the King's Majesty:
Unto the Beasts of the FOREST *you shall no hurt do,*
Nor to any Thing that doth belong thereunto:
The Offences of others you shall not conceal,
But to the utmost of your Power, you shall them reveal
Unto the OFFICERS *of the* FOREST,
Or to them who may see them redrest:
All these things you shall see done,
So help you GOD, *at his* HOLY DOOM!

There is something attractive to the imagination associated with the history of the ancient British forests. A modern manor gives but a poor idea of what a sporting territory once was. The lord of a forest was a petty monarch; he held his courts, and tried his prisoners; he dwelt, aloof from towns and villages, embosomed amidst the uninclosed moorlands and woodlands that surrounded his castellated mansion, and war, love, and sporting were his chief pursuits, the business of his life. If there be now any remnant of the semblance of ancient rural state, it must be looked for in the establishment of some Scottish Lowland chief or Highland laird. The age of civil wars, chivalry, and feudal ceremony is gone; but there is much in Scotland to remind us of the days of yore. The Highland noble—the laird of an extensive but thinly populated district—in his own immediate neighbourhood is looked up to as a prince. Mountain, river, lake, and glen are his; his are the ancestral forests, where the black, the red, and the white grouse wing their flights, undisturbed by the advances of civilisation, and the red-deer and roe-buck, unimpeded by fence or fastness, range at will,—the red-deer on the unplanted waste, the roe in the woods.

To return. After the Forest Charter was granted, any one was allowed to kill game, except in certain privileged places. The places privileged were of four descriptions, viz. a forest, a chase, a park, and a warren. To these may be added a decoy for water-fowl, which had also peculiar privileges. Of these privileged places we collect the following particulars from various authorities. A *Forest* was a certain territory of woody grounds and fruitful pastures, privileged for wild beasts and fowls of forest, chase, and warren, to rest and abide there in the safe protection of the king for his delight and pleasure; which territory of ground so privileged was meered and bounded with unremovable marks, meers, and boundaries, and replenished with wild beasts of venery or chase, and with great coverts of vert for the succour of the said beasts there to abide; for the preservation and continuance of which, there are particular officers, laws, and privileges belonging to the same, requisite for that purpose, and proper only to a forest and no other place. Beasts of forest were properly hart, hind, buck, hare, boar and wolf, but legally all wild beasts of venery. A purlieu was a portion of a forest which was disafforested by the Charta de Forestâ. A *Chase* was a privileged place for receipt of deer and beasts of the forest, and was of a middle nature, betwixt a forest and park. It was commonly less than a forest, and not endowed with so many liberties, as officers, laws, courts, and yet was of a larger compass than a park, having more officers and game than a park. Every forest was a chase, but every chase was not a forest. It differed from a park in that it was not enclosed. Beasts of the chase are, the buck, doe, fox, martern, and roe. A *Park* was a large parcel of ground privileged for wild beasts of chase by the king's grant, or by prescription. A park must be enclosed. The beasts of park properly extend to the buck, doe, fox; but in common and legal sense to all the beasts of the forest. A *Free Warren* was a place privileged by prescription or grant of the king, for the preservation of the beasts and fowl of the warren, viz.

hares, conies, partridges, and pheasants. If a pheasant, or other bird of warren, flew into a free warren, the falconer could not follow it, but it became the property of the owner of the warren. A *Decoy* for wild fowl is to this day privileged, in so far as the owner has the exclusive right to the birds frequenting it; and no person is allowed to fire a gun, or otherwise make a disturbance within a reasonable distance of it without permission from the owner.

In the reign of Richard II. a landed qualification of forty shillings per annum became necessary to entitle a person to keep "any greyhound, hound, dog, ferret, net, or engine, to destroy deer, hares, conies, or any other gentleman's game." The qualification required was increased with the improved value of land, from time to time, until, in Charles the Second's reign, it was enacted, that persons not having £100 per annum arising from freehold, or £150 from leasehold property, or not being of the degree of esquire, or otherwise privileged, should not keep or use "any guns, bows, greyhounds, setting dogs, ferrets, coney-dogs, lurchers, hays, nets, lowbels, hare-pipes, guns, snares, or other engines for taking or killing game."

It was not until the early part of the reign of George III. that killing game was taxed as a luxury, and made a source of revenue to government. A tax of two guineas was first imposed on all persons who should go out in pursuit of game; but the price of the certificate was afterwards raised to three guineas, and subsequently to three and a half guineas. The property qualification is abolished, and now any person who has taken out a certificate and obtained permission from the owner or tenant of the land, in which soever the right at the time may happen to be, is privileged to kill game at all seasonable times. During a long period the sale of game was prohibited, which gave a peculiar value to it, as it was not attainable by any but qualified and certificated persons and their friends, except by indirect means. It is now publicly sold by persons taking out licences for the purpose, and such licensed persons are liable to penalties, and are incapacitated from renewing their licences, should they purchase game from any but duly certificated sportsmen. The licenced dealers are, however, largely supplied by poachers, notwithstanding the penalties to which they subject themselves by trading with uncertificated persons.

Falconry fell into desuetude in the days of the Georges. It is now scarcely known but by name, although the honorary distinction of hereditary Grand Falconer of England is still extant. As falconry fell into disuse, another kind of sport, which is now considered as disreputable, and practised only by poachers, was pursued by the country gentlemen, —the capturing of birds of the game species by means of nets and setting dogs. The dogs were trained to lie down when near to game, and to suffer the net to be drawn over them, so that both dog and birds were entangled in the toil. In this manner partridges are still frequently taken by poachers in the night. A poacher's dog is sometimes known by his habit of crouching when close upon game, and this circumstance not unfrequently leads to a detection of the practices of his master. Netting was considered as a fair mode of taking game until the fowling-piece came into general use.

At the time of the accession of the house of Hanover, falconry, netting, and shooting, were contemporary amusements. The number of shooters was very limited, the inferiority of the guns and ammunition being such as not to induce their general adoption; hawking was going out of favour; and of the three sports, netting was the most commonly practised, until the beginning of the reign of George III., after which time it was no longer deemed the sport of gentlemen. At what time the fowling-piece first came into use is uncertain. We learn from Pope that pheasant shooting was in vogue in Windsor forest during the reign of Anne:—

> See from the brake the whirring pheasant springs,
> And mounts exulting on triumphant wings;
> Short is his joy, he feels the fiery wound,
> Flutters in blood, and panting beats the ground!

Shooting—as practised with guns to which flint and steel locks were attached—may be said to have risen and fallen with the Georgian era. During the latter part of that period, great improvements were made in all the implements and materials of shooting. Double-barrels came into use, horse-nail stubs were employed in the manufacture of barrels, the patent breech and percussion-cap were invented, and the wire-cartridge has since been introduced. Not the least improvement has been that in the manufacture of gunpowder. The excellence of our guns and dogs has tended much to spread the love of shooting, which has become the most popular and universal of British field-sports.

It has been remarked, that ours is pre-eminently the land of sportsmen,—the very name being unknown in all other countries. The observation is in a great measure true, for, if we look around the globe, we find that wherever wild animals are killed for the sake of sport, it is mostly by the Englishman. In Sweden, the Englishman alone kills the bear for sport; the natives kill it for the sake of reward, or to rid themselves of a noxious neighbour. In Asia, the only sportsman that encounters the royal tiger is the Englishman; the native shekerrie shoots the tiger for profit. There also the buffalo and the boar are hunted by the Englishman alone. In Africa, it is the Englishman who hunts the lion, the hippopotamus, and the giraffe. And in America, it is the Englishman, or English settler, who hunts the panther, the bison, and the bear, for sport; the natives do so from necessity. Since, then, the Englishman is the universal sportsman, it behoves the officer, the emigrant, and the tourist, to make themselves acquainted not only with what may be called the first principles of sporting, but more especially with the sports peculiar to the countries to which they are proceeding, a theoretical knowledge of which may be gleaned from the volumes which annually proceed from the pens of our travelled countrymen.

CHAPTER II.

THE JUNGLE.

TIGER SHOOTING, ETC.

The fire-arms chiefly used by the sportsman are the rifle, and the fowling-piece; the latter may be classified into the swivel-gun, which is fired from a rest, and the shoulder-gun. A short, wide-bored musket, charged with a round or oval iron ball, was formerly used for the destruction of such animals as the lion, tiger, or bear. In modern times, the musket has been superseded by the rifle, and the iron ball by a leaden one, hardened with tin or zinc, and weighted with quicksilver.[*] A short piece is said to be preferred to a long one for shooting tigers, bears, and the like, as it may be more readily loaded, and is more easily managed in cases of emergency; indeed, we apprehend the shooter should seldom fire, except when the animal is so near to him that—if he aim coolly—he cannot fail to lodge a ball effectively.

We subjoin the methods of taking aim at wild beasts from practical sporting writers. Mr. Lewellyn Lloyd says,[†] "If a man purposes attacking a bear at close quarters, a double gun is decidedly the best; if it be in the winter season, a detonator is very preferable. Owing to having flint locks, both my barrels, on one occasion, missed fire, which might have been attended with most serious consequences; a large ball is very desirable. The best points to hit a bear, or any other animal, are in the forehead, in the breast, under the ear, or at the back of the shoulder; bullets placed in other parts of the body of an old bear usually have little immediate effect. If the snow be deep, and the bear is crossing a man, he should always aim very low: he must often, indeed, fire into the snow, if he expects to hit the heart of the beast." Captain Williamson gives the following instructions for shooting tigers:[‡] "If the motion of an animal through the grass be perceived, the nearest elephant should be halted; and its left shoulder being pointed towards the moving object, is the most favourable position for taking a good aim. The hunter should fire without hesitation, observing to proportion his level as far within the space between himself and the tops of the yielding grass as the height of the cover may dictate; by this precaution, —equally necessary when shooting fish that are in any degree beneath the surface of the water,—the iron ball will, in general, take effect." Tiger-hunting, on horseback or on foot, is perhaps the most perilous pursuit the sportsman can engage in; but as now chiefly conducted in India, it is not a very dangerous sport. The sportsman, secure in his castled howdah, cannot be surprised by ambuscade, and he has little to fear from the enraged brute at bay; but, unless he be a clever horseman and adroit "pig-sticker," hog-hunting is fraught with more danger. Comparing that sport with tiger-hunting, Captain Mundy says,—"To the hog-hunting of Bengal, the palm of sporting supremacy must certainly be adjudged. Few, who have had opportunities of enjoying both in perfection, will balance between the tiger and the boar. In the pursuit of the former shikkar, the sportsman—though there are certainly some casual risks to heighten the interest and add to the excitement,—feels himself, in his pride of place, ten feet above the ground, comparatively secure; and, should any accident befall him, it is generally traceable to the misconduct of the elephant, or the timidity of the mahout, whose situation, poor devil! with a furious tiger before him, and a bad shot behind him, is any thing but enviable. In the boar-hunt, on the contrary, the sportsman depends entirely on his own adroitness. To have any chance of distinguishing himself, he must have the seat and the judgment of a fox-hunter, the eye of a falconer, the arm of a lancer—and above all, a horse fleet, active, bold, and well-in-hand."* If the size of the game be a criterion to judge of sport, the palm must be awarded to elephant-shooting. It holds high rank where the lion and the tiger are not found. "Elephant-shooting," says Major Forbes, "in exciting interest, as far exceeds any other sport in Ceylon as does the animal itself, compared with the lesser tenants of the forest." He adds, "A sportsman fairly equipped for elephant-shooting, ought to have at least four barrels, and the best form of these would be two double-barrelled guns, carrying balls of an ounce and a-third in weight, and of strength sufficient to take a large charge of powder. I should prefer plain to rifle-barrels, as they occupy less time in loading, which is sometimes of great consequence, and smooth barrels carry balls with sufficient accuracy; for shooting at a distance is never successful in this sport, and it is not advisable (if you have a choice) to fire until you are within fifteen yards of the animal; half that distance is preferable, as then your shot—if it fails to kill—will, in all probability, check him for a sufficient time to allow of exchanging your gun and hitting again."† A large ball is evidently a favourite with the Major. He likewise bestows a preference on the musket for elephant-shooting, it being sooner loaded. The mark being large, and the distance of firing usually short, account for his preference of the smooth bore in that sport. But we apprehend there is no difference of opinion amongst sportsmen, that a grooved barrel is the better weapon for any other of the larger jungle game; the vulnerable, or more properly speaking the vital, parts of a tiger or leopard present a mark which must be deemed small when the excitement—perhaps not unmingled with something like fear—attending the rencontre is taken into consideration; and when engaged with such animals, precision of aim is essential to the personal safety of the sportsman. We give Major Forbes's description of another kind of sport—he is speaking of the interior of Ceylon:—Wild buffaloes, though commonly found in the thinly inhabited districts of the flat country, are very rarely seen near the mountains; they are strong and fierce, and the form of their head is such that a ball fired against it is apt to glance off. For this reason, sportsmen accustomed to buffalo-shooting prefer aiming at the shoulder; and, to insure a fair shot, the best way is for two persons to place themselves so that one may be opposite to the side of the animal when it charges at the other in front. A wild buffalo, intending to attack any one, advances in a curved line, with the head down and inclined sideways, in such a manner that one horn is advanced. Their courage and perseverance in attack are as remarkable as their tenacity of life; therefore, good guns of a large size are quite as necessary in buffalo as in elephant shooting." In 1826, it was found necessary to destroy an elephant in Exeter 'Change. A detachment of foot guards was called in, and directed by surgeons where to fire; and 152 rounds of ammunition were expended before the animal was disabled. This proves how utterly ineffectual the leaden musket ball, as used by soldiers, would be in the forest. We have not the means of deciding whether the difficulty which was experienced in killing that elephant, is attributable to the inefficiency of the weapons employed, or to the want of skill in the storming party. Major Forbes hints that the affair often proved a subject of mirth to the sportsmen in Ceylon; and certainly it was calculated to be such, if a single individual on foot allows a wild elephant to charge within fifteen yards of him before firing at him. Captain Cornwallis Harris, in his South African tour, in 1837, took with him a double-barrelled rifle, carrying balls of two ounces weight, and thus armed, the elephant and rhinoceros alike fell before him. Speaking of the forehead of the elephant, he says,* "A ball hardened with tin or quicksilver readily penetrates to the brain, and proves instantaneously fatal." He gives instances of his killing large elephants at a single shot, and seems to have had no difficulty with the "king of beasts," which he has slain "in every stage from whelphood to imbecility." According to Captain Cornwallis Harris, travelling through countries infested by wild beasts is not so dangerous as it is commonly thought to be. He says, indeed, that during part of his journey, "scarcely a day passed without our seeing two or three lions, but, like the rest of the animal creation, they uniformly retreated when disturbed by the approach of man. However troublesome we found the intrusions of the feline race during the night, they seldom at any other time shewed the least disposition to molest us unless we commenced hostilities." He, however, does justice to the terrors of the maned monarch when he says, "those who have seen him in crippling captivity only—immured in a cage barely double his own length, with his sinews relaxed by confinement—have seen but the shadow of that animal which 'clears the desert with his rolling eye!'" There!—with that roar we dismiss the monsters—carrion, after all, barring wild-boar hams, buffalo steaks, and stewed elephant's feet, of the peculiar delicacy of which we presume not to speak! A sly shot in a walled park—though it is not sporting—were worth fifty such broiling adventures. Reader, cast thine eye forward—see with what a temptation the Young Bard of Avon was beset, and thou wilt forgive him from thy soul, though he *was* a poacher. Thou smackest thy lips like an alderman of the old school, or a common councilman of the new—thy thoughts are of venison only—natural enough, for the idea of sport is associated with something wild. Well! statelier horns are hidden only by a few intervening *leaves*. Let us pass through the inclosure in which these spotted creatures lie; and at one bound northwards, we will land you where—one or other of them—

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[*] The specific gravity of a ball is increased by compression; those made for the public service are hardened and weighted by compression.

[†] *Field Sports of the North of Europe*; by L. Lloyd, Esq. London, 1828.

[‡] *Oriental Field Sports*; by Capt. Thomas Williamson. London, 1805.

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* *Sketches in India;* by Captain Mundy. London, 1833.

† *Eleven Years in Ceylon,* by Major Forbes. London, 1840.

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* *Wild Sports of Southern Africa*, by Captain William Cornwallis Harris. London, 1839.

Trout and salmon, grouse and deer,
'Ploy the sportsman all the year!

CHAPTER III.

THE PARK AND THE FOREST.

FALLOW-DEER SHOOTING.

There are only three kinds of deer in Great Britain,—the red, the fallow, and the roe. The fallow-deer, distinguished from the rest by his dappled* sides and palmated horns, was the dun-deer of the days of Robin Hood—the fat-buck of the pasty-loving friar—and he is still the common deer of our English parks.

When firing at a deer, the aim should be low behind the shoulder, or at the head. It is not usual to fire at a deer which faces the gun. If near enough to aim correctly, the rifleman cannot do better than send a ball through the neck, close under the ears. It may be remarked here, that the last is the quickest mode of dispatching a dog, horse, or any other domestic animal. When a deer is wounded and separates from the herd one or two dogs should be instantly slipped.

The modern terms applied to the male and female fallow-deer are *buck* and *doe*, and to the young ones *fauns.* To roe-deer; *buck* and *doe*, and the young ones *kids.* The mature red-deer, of whatever age, is termed by the forest-keeper and deer-stalker a *hart*, by the hunter a *stag*, the female is a *hind*, and the young ones are *calves.* The red-deer is not properly a hart until his sixth year, or until he has attained his full head, which is when each beam is furnished with brow, bay and tray antlers, and not fewer than two points at the top.

In olden times, when to be discovered at "dog-draw"† or "stable-stand,"† in a forest, chase, or purlieu, was as perilous to the personal freedom of the individual, as if he had attempted the life of the lord of the soil; the country swarmed with officers whose titles and duties are all but forgotten, such as agistors, bow-bearers, wood-wards, wardens, foresters, rangers, regarders, verderors, all of whom were in some way connected with the preservation of *vert* and *venison*. The technical terms for every thing connected with forests and deer were innumerable, and entered into the common language of life, as did afterwards the falconer's terms. The ceremonies too connected with deer were numerous; for instance, at the death of a hunted deer, after it was bled, the person of highest rank present *took say*, that is, made an incision to ascertain the fatness. The same personage had the privilege of cutting off the head; which ceremony being concluded, the hunter first up at the death blew a triple *mort*, if the quarry was a stag or hart; or a double *mort*, if a buck: and then the rest blew a *recheat*. They then, for the amusement of the assembled peasantry, concluded the ceremony with leashing, if they could find a convenient victim—some luckless wight who had come too late into the field, or who had mistaken a term of art, or had hallooed a wrong deer, or attempted to leave the field before the death. The poor fellow was held either across the saddle, or on a man's back, and some one present claimed the privilege of presenting him with *ten pounds and a purse*, or, in other words, of administering ten lashes with a pair of dog-couples tolerably severe, and an eleventh, the

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* There is a variety not spotted.

† *Dog-draw*, in the ancient language of the chase, signified the tracking, or drawing after deer with a hound or other dog. *Stable-stand*, was the act of standing in ambush with a bow and arrow, and with deer hounds in leash ready to slip.

purse, that was heavier than all the other ten put together.

In those days, the male fallow-deer was called during the first year a faun, the second a pricket, the third a sorrel, the fourth a sore, the fifth a buck of the first head, the sixth a buck. The female fallow-deer was called during the first year a faun, the second a pricket's sister, the third a doe.* The buck comes in season the 8th of July, and goes out at *Holy-Rood Day*, which is the 14th of September. The doe comes in season when the buck goes out, and goes out at *Twelfth-tide.* †

The roe was called the first year a kid, the second a girle, the third a hemuse, the fourth a roe-buck of the first head, and the fifth a fair roe-buck.

The male red-deer was called the first year a calf, the second a brocket, the third a spayed (or spire), the fourth a staggart, the fifth a stag, the sixth a hart. The female red-deer was called the first year a calf, the second a brocket's sister, and the third a hind. If a hart was hunted by the king, and escaped alive, he was called a *Hart-Royal*; and if in hunting he was driven out of the forest so far that he was not likely to return of himself, and the king gave over hunting him, then, because he had made such sport, he caused a proclamation to be made in all the towns and villages near the place to which he was pursued and hunted, that no person should kill, hurt, or hunt him, and appointed certain foresters to look after him till he returned to the forest, and afterwards he was called a *Hart-Royal Proclaimed.* *

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* *Nelson's Game Laws.* London, 1736.

† *The Compleat Sportsman.* London, 1762.

As our sovereigns have ceased to pursue deer, all harts having brow, bay, and tray antlers, and crowned with three or more points on the extremity of each horn, are now termed *Harts-Royal.*

DEER-STALKING.

FORESTER.

By Jove! we are upon them. Tread lightly, crouch closely, speak lowly, breathe softly, while we examine the situation of the herd with our glasses, and the hill-men go round to give the deer their wind and drive them to us.

SOUTHRON.

Amongst so many scores of hinds how few harts! there are some large beasts, but not one good head. How can I bear off a trophy from such a herd? I would have the horns of my first hart "hung up like monuments"—memorials of what I saw and did in the North—to relieve the tedium of after hours of sluggish ease and inglorious repose. There is nothing here in the shape of horn that a cutler would give you half-a-crown for.

FORESTER.

Look lower down the glen: there are at least three harts-royal; one has a crowned, another a palmed top, and another—magnificent creature!—his horns are neither crowned, nor palmed, nor yet exactly forked, but irregular, as those of most old harts are. He is so much larger than the rest, that if we wound him, I think I can trace him by his slot, though he keep up with the herd. Now he turns this way. What horns! What a span!—the width between the horns is a sure indication of a well-grown animal. He has a perfect head, "beamed, branched, and summed," as they would have said in old times. He has brow-antlers, surantlers, royals, and croches*—perfect!

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* *Manwood's Forest Laws.*

SOUTHRON.

He has brow, bay, and tray antlers, and three or four points on the top of each beam. He is grey on the breast, face, haunches, and shoulder! May not that fine fellow be old enough to recollect the war-whoop of Culloden? Many a proud lord and stalwart forester has been laid low since he first browsed on the braes.

FORESTER.

Move quietly, or those listening watchful hinds will betray us. Hinds must have been unknown to the ancients; or they would never have invented such a nondescript as Argus, since a two-eyed hind would have answered their purpose as well.

SOUTHRON.

What in the world are the men doing?—do you call this driving deer?—the men are going from

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* Sometimes called *crockets*.

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G. Aikman Sc

[illegible] I do not know how your [illegible] country [illegible] of the door—[illegible] here [illegible] you are [illegible] such them.

FOREST[illegible]

[illegible] must not [illegible] them [illegible] many [illegible] to give them their [illegible] on their [illegible] so [illegible] the [illegible] of our gen[illegible] a [illegible] dropped [illegible] quite a [illegible] I [illegible] had him again [illegible] a [illegible] of a [illegible] that was [illegible] to the hills [illegible] ever it [illegible] he went without it [illegible] ever [illegible] [illegible] five or six hours [illegible] it. [illegible] a mile beyond the door—a [illegible] with [illegible] way he [illegible] [illegible] pricked [illegible] [illegible] catch [illegible] in the [illegible] given them [illegible] young [illegible] and now the [illegible] the place [illegible] and [illegible] [illegible].

[illegible] B N.

[illegible] to the forest. [illegible] we walked, [illegible] and now [illegible] [illegible] been ab[illegible]

them. I do not know how you measure distance in such a country as this, but I should say the men are a mile off the deer—the deer can neither see nor hear them—you are joking when you say they can smell them.

FORESTER.

The deer must not see them: the men are now manœuvring to give them their wind, without being seen: on their doing so at the right place and time, the chance of our getting a shot depends. No quadruped has so acute a sense of smell as a deer. I will back him against a blood-hound. I have heard of a tame deer that was in the habit of going with a shepherd to the hills: whenever it happened that he went without it, the deer would trace him step by step, though he had five or six hours start of it. Observe how the glens converge to a point about half a mile beyond the deer—a false movement there will be fatal—none but experienced foresters can tell which way the currents pass there—the sentinel hinds on the left prick their ears to listen, and raise their noses to catch the taint in the air—they suspect danger—the men have given them their wind at the wrong point—and now the whole herd are off, they have taken to the plain where they are safe. We must commence another cast.

SOUTHRON.

Not for all the deer in the forest. How many miles have we walked, trotted, run, crawled, and swum already?—and how high, as the geographers express it, have we been above the level of the sea!

However, this is glorious sport! the very possibility of obtaining a shot is enough. We will resume to-morrow.

In this manner, or with a miss, or the death of a hind killed by mistake, the day often terminates; but frequent failures tend only to heighten the pleasure of ultimate success. We must now attempt a brief description of wild-deer and deer-forests, and then conclude the chapter with some of the events of a successful stalk.

The red-deer or stag, is found chiefly in the uncultivated mountainous districts of Scotland and Ireland. The greater part of his body is a dark red-brown colour. He is a much more noble animal in appearance than the calf-like fallow-deer. His height, when erect, is seven or eight feet from the ground to the tip of his horns. To destroy the deer of an adversary was once a mode of annoyance. Chevy Chase, it would seem, from the opening stanzas of the famous ballad of that name, was an expedition of this description;—

> To drive the Deer with Hound and Horn,
> Earl Percy took his Way;
> The Child may rue that was unborn,
> The Hunting of that Day.
>
> The stout Earl of Northumberland,
> A Vow to God did make,
> *His Pleasure in the Scottish Woods,*
> *Three Summer's Days to take,*

With fifteen Hundred Bowmen bold,
All chosen Men of Might,
Who knew full well in time of Need,
To aim their Shafts aright.

The hounds ran swiftly through the Woods,
The nimble Deer to take,
And with their cries the Hills and Dales
An echo shrill did make.

The pursuit of deer with the rifle is termed deer-stalking. To kill the semi-domesticated fallow-deer requires little skill beyond that possessed by a good marksman. The skill of the deer-stalker, in pursuit of red-deer, is not only dependent on a good use of the rifle, but is shown in his ability to find and approach his game—to do which successfully, requires the most unwearied perseverance. Many of the Scottish forests, wherein the stalking of deer in their wild state is practised, are of immense extent. It is on such tracts of land as the forests of Marr, Atholl, and Invercauld—not inferior to the smaller English counties in extent—that the red-deer is sought. The forest of Atholl alone is said to be more than forty miles long, and in one part eighteen broad, of which about 30,000 imperial acres are devoted to grouse, 50,000 partly to grouse and partly to deer, and there are reserved solely for deer-stalking 52,000 imperial acres. In these vast solitudes—if the longevity assigned to deer by tradition be true,—the Highlander stalks the identical harts which, a century ago, bore the scars of the weapons of his ancestors. An old Celtic rhyme which has been thus Englished, shows the great age to which the stag and the eagle are supposed to arrive,—

THRICE THE AGE OF A DOG IS THAT OF A HORSE ;
THRICE THE AGE OF A HORSE IS THAT OF A MAN ;
THRICE THE AGE OF A MAN IS THAT OF A DEER ;
THRICE THE AGE OF A DEER IS THAT OF AN EAGLE.

So far as regards eagles, these lines contain an assertion which can neither be proved nor negatived. That eagles live a very long time in a state of captivity is notorious, but how much longer they will live in a state of freedom is unknown. As regards deer, there has long existed a custom, in some of the Northern forests, of marking calves ; and as the mark of each forester is known, it might be supposed that the extreme age to which deer arrive would ere this have been ascertained, but such is not the fact. The concurrent testimony of many traditions,—which bear the semblance of truth, inasmuch as dates and names of persons and places are given with much circumstantiality,—assign to the stag an extreme longevity,—one hundred, or one hundred and fifty years, and even more,—but there is no one instance sufficiently well authenticated in all particulars to be relied upon. That the age to which a stag will live has never been satisfactorily proved, is the opinion of those long conversant with the habits of deer. A stag in Richmond Park lived in a half-domesticated state twenty years ; and we believe that there has not hitherto been any well-established case of greater longevity made public ; we are, however, enabled to instance a stag that lived nearly thirty years.

Mr. John Crerar, who was head forest-keeper at Blair-Atholl nearly sixty years, and whose father had likewise the charge of Atholl Forest for a long time before him, remembered that in the third Duke of Atholl's time, a number of red-deer being in a park at one of his Grace's seats, (Atholl House,) his father, being then keeper, was ordered by the Duke to shoot the whole of those deer, except three of the oldest harts and three hinds, which were to be kept. When the late Duke came into possession of the estate on his father's death, one of those harts was fifteen years old, and was alive, to Mr. John Crerar's knowledge, fourteen years after, at which time a deer-hound unluckily got into the park, and chased this hart to a pond frozen over, when the ice broke, and the hart was drowned. This hart's age, then, must have been nearly thirty years, and it might perhaps have lived many years longer had it not met with the accident. Deer, like hares, in extreme old age become grey, if not white; but it remains to be proved at what age that change takes place in deer, and how long they live after it has taken place. We have reason to believe that the hart in question had not assumed that appearance; but the death of Mr. Crerar, which occurred when these sheets first went through the press, has perhaps precluded its ever being known. Nor is it known what became of the other five deer. Had the drowned hart been grey or white, it would have been a matter of notoriety.*

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* Mr. John Crerar, the veteran forester, upon whose authority the account of this deer rests, for nearly three-quarters of a century was the constant companion on the hills of the many illustrious individuals who essayed their skill in deer-stalking, or witnessed the drives, in the Forest of Atholl. His father served three successive Dukes of Atholl, and had the honour of attending the chivalrous Prince Charlie on a grouse-shooting excursion, on his march to the

It is probable that, before the introduction of the rifle, a great number of hinds and young harts were destroyed in proportion to the number of adult harts killed; and that then there would occasionally be met with harts grey and toothless, and exhibiting other symptoms of old age, which might naturally give rise to the opinion of the extreme longevity of deer. But now the rifleman selects his victim, and the finest harts fall before him; it is therefore scarcely possible for harts now to attain even twenty years, whatever may be the natural term of their existence.

Besides that fewer hinds are shot, the full grown ones are not so conspicuous in the herd as the antlered harts, consequently they enjoy a comparative immunity from the leaden death. Hinds bearing every symptom of extreme age are occasionally found in the Scottish forests. In November 1837, a hind was shot whose head and breast were nearly white, and the rest of her body a mixed brown and grey; most of her teeth were decayed, and she was lame and poor. Another was killed in the same year without a single tooth, and which appeared, from the state of the gums, to have been toothless some time. The venison of each was as tough as Indian-rubber.

The mouth affords no criterion of the age of deer, except that the want of teeth implies extreme age.

Lowlands in 1745. Mr. John Crerar succeeded his father as forest-keeper in 1776. On his attaining his 90th year, he was presented with a silver quaich by the Members of the Curling Club at Dunkeld, in token of their admiration of the skill and ardour he had displayed in all manly games. He died on the 1st March 1840, in his 91st year.

Nor do the horns or slot afford any after the sixth year. Some harts grow darker coloured, others not, after the sixth year.

The question of the red deer's age is a subject of sufficient interest to sportsmen to warrant this digression from our subject. We are, however, little wiser than when we set out on the inquiry. Our knowledge amounts to this,—that numerous traditions assign an extreme longevity to the stag; naturalists, judging of red-deer by the period of gestation, and the time at which they arrive at maturity, as compared with other viviparous animals, rank them amongst those which do not attain a great age; a stag has been known to live twenty years, another thirty; but how soon after the latter period they become grey or white, remains to be proved; as also, how long they will live after having grown grey or white. Nor is it certain that whiteness is altogether the result of age—though we entertain little doubt on that point—and not of accident. That it should be caused by a wound, or hurt, or disease, is not more improbable than that a body-wound will affect the growth and shape of the horn on the same side as the wound—a fact that has been often noticed, and of which there is no doubt.

In the rutting season—which commences in September—the harts become fierce and bold, and it is said they will even attack men; but accidents from them are very rare, though certain it is they are held in dread at this season. They fight furiously with each other, and bellow like bulls till the mountains echo again. They are at this season covered with earth from rolling in their soiling pools—soft peat moss, and by their dark appearance it is known when they are no longer fit to be killed.

When the harts go out of season, yeld (barren) hinds come in. Hinds are much more numerous than harts, but are more difficult to be approached, except when they have calves, when they are not fit to be shot. The period of gestation of the hind is eight or nine months. They generally drop their calves in June or July. They have occasionally two at a birth, but that is seldom—occurring not so often as with the cow. Harts shed their horns annually.

Red-deer usually move up wind; their acute sense of smell thus giving them notice of danger. It is by taking advantage of the wind that the deer-stalker's success in a great measure depends. In a mountainous country they can be driven in any required direction by skilful foresters. On wide plains red-deer are inaccessible.

The deer-stalker's dogs, which are always held in leash until a wounded animal is detached from the herd, should, so far as practicable, combine the nose of the blood-hound with the speed of the greyhound, and run mute.

The deer-stalker has recourse to a thousand manœuvres to approach a herd or solitary stag. The animals are usually descried at a long distance, either by the naked eye, or by the aid of an achromatic telescope, and the mode of approaching them entirely depends upon the situation in which they are discovered. Should it seem impracticable to steal upon them while at rest, the stalkers, armed with rifles, wait in the defiles through which the deer are expected to pass, whilst the attendants make a circuitous movement to get beyond the deer and drive them in the direction required. The deer-stalker, besides being an excellent shot, should have good judgment of ground and a hardy frame, combined with the patience and power to undergo extreme fatigue and privation.

When the red-deer is fired at, he is usually at a considerable distance, and perhaps bounding away at full speed. Behind the shoulder, therefore, as presenting the largest target, is the favourite mark. "In killing deer,"* says Mr. Maxwell, "it is necessary to select the head, or aim directly behind the shoulder. A body-wound may eventually destroy the animal, but the chances are that he will carry off the ball." Mr. Scrope,† whose experience and success in deer-stalking render his remarks valuable, says, "the most perfect shots and celebrated sportsmen never succeed in killing deer without practice; indeed, at first, they are quite sure to miss the fairest running shots. This arises, I think, from their firing at distances to which they have been wholly unaccustomed, and is no reflection upon their skill. It is seldom that you fire at a less distance than a hundred yards, and this is as near as you would wish to get. The usual range will be between this and two hundred yards, beyond which, as a general rule, I never think it prudent to fire, lest I should hit the wrong animal, though deer may be killed at a much greater distance. Now the sportsman who has been accustomed to shot guns, is apt to fire with the same sort of aim that he takes at a grouse or any other common game; thus he invariably fires behind the quarry; for he does not consider that the ball, having three, four, or perhaps five times the distance to travel that his shot has, will not arrive at its destination nearly so soon; consequently, in a cross shot he must keep his rifle more in advance. The exact degree, as he well knows, will depend upon the pace and remoteness of the object. Deer go much faster than they appear to do, and their pace is not uniform, like the flying of a bird; but they pitch in running, and this pitch must be calculated upon."

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* *Wild Sports in the West*, by W. H. Maxwell, Esq. London, 1833.

† *The Art of Deer-Stalking*, by William Scrope, Esq., F.L.S. London, 1839.

Although the red-deer has not

> The dreadful plunge of the concealed tiger;

nor charges he like the maimed lion, or elephant, or buffalo at bay: he possesses qualities which render his death as difficult to achieve as that of any of the foregoing quadrupeds; since to the gracefulness of an antelope, he unites the agility of a chamois—the eye of a lynx—the nose of a vulture—the ear of a hare—the vigilance of a bustard—and the cunning of a fox—he can swim like a sea-fowl—in speed he will outstrip the race-horse—and in the height and length of his leap none but himself can be his parallel! The anxiety attending this sport must be as intense as the pursuit is laborious. After climbing for hours the mountain-side, with the torrent thundering down the granite crags above him, and fearful chasms yawning beneath him,* the stalker, with his glass, at length descries in some remote valley, a herd too distant for the naked eye. He now descends into the tremendous glen beneath, fords the stream, wades the morass, and by a circuitous route threads the most intricate ravines to avoid giving the deer the wind. Having arrived near the brow of the hill, on the other side of which he believes them to be, he approaches on hands and knees, or rather vermicularly, and his attendant, with a spare rifle, does the same. A moment of painful suspense ensues. He may be within shot of the herd, or they may be many miles distant, for he has not had a glimpse of them since he first discovered them an hour ago. His videttes on the distant hills have hitherto telegraphed no signal of his proximity to deer; but now a white handkerchief is raised, the meaning of which cannot be mistaken. With redoubled caution he crawls breathlessly along, till the antlers appear; another moment and he has a view of the herd;—they are within distance. He selects a hart with well-tipt, wide-spreading horns. Still on the ground, and resting his rifle on the heather, he takes a cool aim. His victim—shot through the heart—leaps in the air and dies. The rest of the herd bound away; a ball from another barrel follows—the "smack" is distinctly heard—and the glass tells that another noble hart must fall, for the herd have paused, and the hinds are licking his wound. They again seek safety in flight, but their companion cannot keep pace with them. He has changed his course; the dogs are slipped and put upon the scent, and are out of sight in a moment. The stalker follows; he again climbs a considerable way up the heights; he applies the telescope, but nothing of life can he behold, except his few followers on the knolls around him. With his ear to the ground he listens, and amidst the roar of innumerable torrents, faintly hears the dogs baying the quarry, but sees them not; he moves on from hill to hill towards the sound, and eventually another shot makes the hart his own. The deer are then bled and gralloched, and partially covered with peat; the horns are left upright, and a handkerchief is tied to them to mark the spot, that the hill-men may find them at the close of the day. Let the reader imagine how much the interest of all this is enhanced by the majestic scenery of an immense, trackless, treeless forest—to which domesticated life is a stranger—where mountain, corrie, cairn, and glen, thrown promiscuously together, present the grandest of savage landscapes, and as the field of wild adventure, cast into shade what Mr. Scrope not unaptly designates "the tame and hedge-bound country of the South!"

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* An idea of the height and steepness of some of the forest-mountains may be formed by the fact, that from a dozen to twenty deer are sometimes destroyed at once by the fall of an avalanche, in winter.

ROE-DEER SHOOTING.

Roe-deer shooting is conducted similarly to hare shooting in covert. While the covers are beaten, the shooters, placed at certain points, fire at the roes as they dash past them, with large buck shot. They are mostly seen in pairs, or bevies of five, six, or seven.

The red-deer is sometimes unharboured in cover; but for the most part his lair is on the plain or mountain-side; his horns seem to unfit him for making way through thickets. The roe beds in the woods; it is essentially the deer of the woods, being seldom found so much as three miles from cover. It does much mischief to young trees, and the labours of the agriculturist. When discovered in growing corn, it is usually shot with a rifle. In cultivated districts, interspersed with wood and rock, in the Highlands, the roe abounds, and it is looked upon by the farmer as a greater nuisance than the rabbit is in the South.

The roe-buck has in general three points to each horn, sometimes four or even more, and sometimes only one.

In August, the buck chases the doe, for the purpose, as is supposed, of making her give up suckling her kids; and so determined are the bucks on their object, that they will chase a doe for several hours without intermission round some favourite "knowe." The bucks become so worn by this exercise, that even poachers do not then think them worth shooting.

Roe-deer commence rutting (or tourning) the end of November, and give birth to their kids from the middle of May to the middle of June. They have sometimes only one, sometimes three, but generally two at a birth.

These graceful but diminutive creatures are much more difficult of domestication than the red-deer, and instances of their being tamed are fewer. We have heard of one living in a domestic state several years, during which it was often allowed its freedom in the woods, from whence it would always return.

CHAPTER IV.

THE MOOR—THE GLEN—THE PINE WOOD—AND THE GRANITE CLIFF.

RED GROUSE SHOOTING.

In comparison with grouse shooting and deer stalking, all the other sports of this country are mere play. Never since the days of

> Nimrod the founder
> Of empire and chase,
> Who made the woods wonder,
> And quake for their race,*

has any sport been followed that requires greater personal exertion. Grouse shooting is the sport of all others exclusively British; the partridge, the pheasant, the black-cock, are widely dispersed over other countries, but the red grouse is only found on the British Islands.

Many causes contribute to the popularity of grouse shooting, amongst which may be enumerated the following. It commences during the parliamentary recess, and long vacation,—the legislator's,

* Byron.

lawyer's, and collegian's holiday; and it is no wonder that, after being cooped up all summer, these, or any other classes of society, should seek relaxation in the sports of the field. August is the season when every one, from the peer to the shopkeeper, who can afford the indulgence, either rusticates or travels. In that month the casual tourist, the laker, and the angler, are often in the North, when the temptation to draw a trigger is irresistible. Grouse shooting fascinates the young shooter more than any other kind of sport, inasmuch as the season commences with it. Partridge shooting is a comparatively tame and uninteresting amusement. To the majority of sportsmen a grouse-shooting excursion only occurs once a-year, and then lasts only a few days; the sport, therefore, seldom palls, but during the long interval of time that elapses between each, the coming season is ever looked forward to with additional interest. Grouse shooting is, in many respects, a source of greater expenditure to the sportsman,—it requires more preparation, and is attended with more difficulties than any other kind of shooting; but these circumstances, so far from detracting from, probably serve to enhance the enjoyment of the sport, —for we are apt to estimate whatever is obtained with difficulty and expense at a higher rate than what is gratuitously afforded us.

It is not uncommon for an accomplished sportsman to bag fifty brace on the 12th of August, on preserved grounds. What may be termed a good day's sport differs much on different moors;—on well preserved moors the average may be from ten to

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GROUSE SHOOTING.

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twenty brace; on subscription moors the shooter should not be dissatisfied if he has the opportunity of killing from three to five brace per day during the first week of the season, though this would be deemed a low average on the Scottish mountains. The Northern lairds are becoming as fond of *battû*-ing grouse as the Southrons are of pheasants. The greatest feat on record in this way was achieved by Mr. Campbell of Monzie, on the 12th of August 1840, when he bagged one hundred and twenty-two brace and a half.

The grouse-shooter should be long in training before the season, so as to be able to master his ground, and carry his gun without much personal inconvenience. He should ride or drive to and from the shooting ground, for if he is unable to undergo the labour comfortably, and the labour required is excessive, he will by no means feel at home on the moors, and the pleasure to be derived from the sport will but ill compensate for the fatigue. It is much more difficult to walk over heather than they who have not tried it imagine. There is an elasticity and spring in it that is extremely harassing and wearisome to the feet, being something like walking on sand or snow. Shooters, who boast of their acquaintance with London gun-makers, and who talk of their feats in the shooting galleries, and of having slain pigeons at Battersea, and pheasants in my Lord Battue's preserves, are often wofully disappointed on their arrival in the North. It may not be out of place to enumerate some of the causes of their disappointment,—all of which cannot be provided against, but the mention of them may put the stranger on his guard, and he will do well to provide against such of them as he may think will else inconvenience himself.—He is out of training and cannot walk. His equipment is incomplete. His pivots are choked up. His caps will not fit. His wadding and cartridges are cut for a gun of very different gauge. His dogs, never having seen any other winged game than partridges and pheasants, will not point grouse; they are wild, not being any longer under the eye of the keeper; one of them scours the country half a mile in advance, and the other will not suffer a bird that can be put up to remain on the ground; on being thrashed, one of them turns sulky, and the other dashes away full-cry after sheep. Birds are wild, and the shooter has no shot larger than No. 5. His shoes are thin, and cling to his feet like so much whit-leather. It is excessively hot, he is overladen with shot, and his Indian-rubber gaiters will not absorb the perspiration, nor suffer it to evaporate; his stockings are consequently soaked with wet. His hat is heavy,—it will neither resist wet nor is it ventilated. He is, when the sun shines, half roasted, and when clouded, half starved; or he is lightly clothed, and caught in a thunder-shower. He wears thin stockings, and is foot-sore. He is lost in the mist, for want of a guide, a pocket compass, or a previous *intimate* knowledge of the localities, and inadvertently becomes a trespasser, when a glorious row ensues, ending, perhaps, in a struggle for the encroacher's fowling-piece! The *beau-idêal* of a sportsman, as regards dress, is oftentimes carefully studied,—the new comer is inevitably marked by some absurdity in this way, but his *tout ensemble* is soon metamorphosed amongst bogs, berries, and peat-holes, and he is too late made aware that he ought to have bestowed a thought on his comfort and convenience, rather than on his dress. If he does not tire himself by walking beyond his strength, probably over useless tracts, in the early morning, he most effectually accomplishes that object in the hot sun at noon, and is not only rendered incapable of following up the sport in the afternoon, but he feels exhausted the next morning.

A catalogue of some of the articles which form the grouse shooter's equipment may not be unserviceable. *Dogs; fowling-piece,* in case or bag; two extra *pivots;* a *pivot pricker; pivot wrench; gun-rod* or cleaner; a small bottle of *olive oil;* some *linen cloth* and *leather; safety powder-flask; dram flask; shot-belt; bird-bag;* a *canister* of *powder;* a quantity of *shot*, various sizes; *wire cartridges* and *case;* a *light shooting jacket;* a *heavy weather ditto;* a few pairs of *woollen stockings;* strong laced *boots,* or strong *shoes* and *gaiters;* a *shooting cap*, or very light *hat; copper-caps* and *box; wadding; screw-turner; spring-cramp;* a *punch* for cutting waddings; *shoe-oil; straps, collars, couples,* and *cords,* for leading and tying up dogs; *dog-whistle*; *dog-whip;* a *pocket-knife;* a *pen-knife;* a *pocket-comb;* some *cord* or string for tying up game; *hampers* in which grouse may be packed between layers of heather; *sealing-wax* and *seal* to mark birds when sent by a coach or carrier; *game certificate; card of permission,* or other authority to produce to the game-keepers; a *pedometer;* a small *pocket-compass*, which is useful in a fog; *sandwiches; cigars; soda powders; Prometheans; brandy;* an *achromatic telescope*, to view the scenery and the deer, may afford amusement in the Highlands. Half these things may be dispensed with,—it is for the shooter to judge which of them he will require.

On the eleventh of August the sportsman arrives at his shooting quarters,—probably some isolated tavern, "old as the hills," (if such a house as the grouse-shooter occasionally locates himself in, in the northern or midland counties of England, or in Scotland, where oat-cake and peat supply the place of bread and fuel, can be called a tavern.) The place, humble in character, has been the immemorial resort of sportsmen in August, although, during the rest of the year, sometimes many months elapse ere a customer, save some itinerant salesman calling for his mug of beer, "darkens the door." There he will find all the keepers, and poachers, and young men from the country round assembled, amounting in the whole to not more than some eight or ten persons, each anxious to display his knowledge of the number and localities of the broods, but each differing, wide as the poles asunder, in his statement, except on four points, on which all agree, viz. that the hatching season has been finer than was ever known before!—that the broods are larger and more numerous than were ever counted before!—that the birds are heavier and stronger than were ever seen before! —and that they will, on the following day, lie better, and afford more sport than they ever did on any opening day before! Each successive season being, in their idea, more propitious than its precursor!

Many are the topics discussed, and not the least interesting is the question, at what time shall we commence operations in the morning? When the guns are expected to be numerous, it is decided to be on the ground as soon as it is light enough to commence operations in a fair way. Birds may be killed above the horizon long before sunrise, but the sportsman's rule is never to fire until the morning is so far advanced that he can plainly distinguish them in their flight against the dark hill-side. They arrange to breakfast at three, (calculating the time by their watches, and not by the house clock, which may have a way of going peculiar to itself,) and to be on the ground before four, as the greatest number of birds are killed between four and six,—and when there are many contesting for the prize it is folly to throw away a chance. If the moor is strictly preserved, and no guns are expected but their own, they determine not to disturb the birds until seven or eight, since birds lie better during the day when not disturbed early in the morning.* This question being disposed of, inquiry is made whether the dogs have been fed; and the shooters who intend killing their full complement of birds retire before eleven, (a late hour, by the bye, in the vicinity of a moor), lest they should not feel as they could wish in the morning; and this is the more necessary if they be not members of a Temperance Society. Every bed is speedily occupied, and the retainers lie on sofas, elbow-chairs, or whatever else presents itself; but how often it happens that the god of slumber is invoked in vain!

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* "Hunting for grouse during the basking hour of the day is rigidly prohibited by all gentlemen who compile sporting directories, and yet every shooter knows that at those proscribed hours himself is commonly on the moors. Morning and evening, when the birds are on foot in search of food, is undoubtedly preferable to the duller portion of the day, when they are accustomed to indulge in a *siesta*; but generally some considerable distance must be travelled before the sportsman can reach his beat from his quarters,—the morning is consumed on horseback or in the shooting cart, the same road must be again accomplished before night, and hence the

Morning dawns—the morning of the Twelfth—and "heavily with *mists* comes on the day." The occupiers of benches and chairs are first on the alert—the landlady is called—breakfast is prepared—the dogs are looked at—all is tumult, noise, and confu-

middle of the day is necessarily the portion devoted to pursuit of game.

"To find the birds, when, satisfied with food, they leave the moor to bask in some favourite haunt, requires both patience and experience, and here the mountain-bred sportsman proves his superiority over the less practised shooter. The packs then lie closely, and occupy a small surface on some sunny brow or sheltered hollow. The best nosed dogs will pass within a few yards and not acknowledge them; and patient hunting, with every advantage of the wind, must be employed to enable the sportsman to find grouse at this dull hour.

"But if close and judicious hunting be necessary, the places to be beaten are comparatively few, and the sportsman's eye readily detects the spot where the pack is sure to be discovered. He leaves the open feeding grounds for heathery knowes and sheltered valleys; and while the uninitiated wearies his dogs in vain over the hill-side, where the birds hours before might have been expected, the older sportsman profits by his experience, and seldom fails in discovering the dell or hillock, where, in fancied security, the indolent pack is reposing."—*Wild Sports of the West.*

sion—reckless must he be that can rest longer in bed —"the cootie moorcocks crousely craw," little fearing that many a bold mountaineer amongst them must, ere night, be

> Whistled down with a slug in his wing!

The dram-flasks are filled—the sandwiches cut—some provision is made for the dogs—the shot-belts are buckled on—a multitude of other matters are arranged and orders given. Next is heard the howling and yelping of dogs—the cracking of whips—the snapping of locks—the charging, and flashing and firing of guns*—and every other note of preparation! The march is sounded, and away they wend—an emulous band, each endeavouring to eclipse the other in the number and size of birds killed. On that day there is an universal scramble for game; almost every person who carries a gun then strives to fill his bird-bag, to the exclusion of every other object—regardless for a while of companionship, or personal comfort, or of the "savage grandeur" of the scene before him, and indifferent whether an undeviating level bound his view, or whether

> Lakes and mountains around him gleam misty and wide!

It is not until after-days of leisure, and when a series of trivial adventures, or recollections of past doings, have made several sites *classical*, if we may be allowed the term, that the stranger-sportsman becomes enamoured of the wilds, and shares the feelings of the native hillsman, who bears the same love to his mountain-home and mountain sports, as the Switzer does to his!

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* It may seem unsportsmanlike to flash off, and charge, before arriving at the shooting ground, but we deem it an act of prudence. Out of a dozen guns, some of which have not been used all summer, and others which have been carelessly cleaned, the probability is, that one or two cannot be let off until a quarter of an hour has been spent in firing caps and clearing out the pivots.

A scarcity of birds, or unfavourable weather, is so frequently productive of disappointment to the over-eager sportsman, that we should advise all who purpose taking, in autumn, "their pleasure on the Scottish hills," not to be too sanguine in their expectations of success, for if the sportsman relies on what he is told of the birds, he may rest on a "broken reed." But if he be impressed with the sublimity of natural scenery on a stupendous scale—if "the power of hills"* be on him, he will take another, and a nobler, view of his *ploy:* he will enter into a resolution to make himself comfortable under any circumstances—to be content with any luck—to put up with any inconveniences—and he will undergo, in the pursuit of his favourite pastime, what other men would call bitter punishment. Surely there must be something more than the mere slaying of birds that induces him thus to toil, and renounce his customary indulgences? That something is said to be the love of nature, inherent in us all, though we be not fully conscious of it. The shooter who ranges the heathery wilderness, and beats the warm valley, the clough, the glen, the brake and the covert, in turn, has, though he may not be aware of the extent of it, a community of feeling with the objects around him, which irresistibly leads him on. He feels a thousand undefinable associations with the country he traverses—a thousand sympathies "which he can not express, but cannot all conceal,"—"where rise the mountains there to him are friends,"—"the hills are unto him companionship," and "the sounding cataract haunts him like a passion!" To the grouse-shooter in training, full of health and strength, and well-appointed, it is of little consequence, if he would but think so, whether game be abundant or not. The inspiriting character of the pursuit, and the wild beauty of the scenery, so different from what he is elsewhere in the habit of contemplating, hold out a charm that dispels fatigue! He feels not the drudgery! To him the hills are lovely under every aspect; whether beneath a hot autumnal sun, with not a cloud to intercept the torrid beam, or beneath the dark canopy of thunder-clouds—whether in the frosty morn or in the dewy eve—whether, when through the clear atmosphere he surveys, as it were in a map, the counties that lie stretched around and beneath him, or when he wanders darkly on amidst the volumy vapour—the Ossianic mist—that rolls continuously past him! The sun shines brightlier, and the storms rage more furiously than in the valleys! The very sterility pleases: and to him who has been brought thither by the rapid means of travelling now adopted, from some bustling mart of trade, or vortex of fashion, the novelty of lonesomeness is agreeably exciting! The stillness that reigns around is as new to him as the solidity of land to the stranded sailor!

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* Wordsworth's Helvellyn.

Scarcely is there a change of scene; silence and solitude—hill and ravine—sky and heather universally prevail!—the outline is everywhere bold—and where the view terminates amidst rocks and crags, frequently sublime! His noon-day bivouac may be in some quiet dell shut out from the world; or near some rocky summit, perchance on the boundary of the muir-lands, whence, on the one hand, he beholds an unbounded expanse of heathery hills, by no means monotonous if he look at it with the eye of a painter, for there is every shade of yellow, green, brown, and purple—the last is the prevailing colour at this season, the heather being in bloom; nor are the hills monotonous if he look at them with the eye of a sportsman, for, by this time, he will have performed many feats, or at any rate will have met with several adventures, and the ground before him is the field of his fame; he now views with interest many a rock, cliff, and hill, which lately appeared but one of so many "crags, knolls, and mounds confusedly hurled;" he contemplates the site of his achievements as a general surveys a field of battle during an interval from strife; the experience of the morning has taught him a lesson, and he plans a fresh campaign for the afternoon, or the morrow, or probably for the next season, should the same hills be again destined to be the scene of his exploits: and, on the other hand, he looks down, and, in bright relief, sees the far-off meadows, and hamlets, the woods, the river, and the lake! He rises, and renews his task. The invigorating influence of the bracing wind on the heights, lends him additional strength—he puts forth every effort

—every nerve is strained—he feels an artificial glow after nature is exhausted—and returns to the cot where he had previously spent a sleepless night, to enjoy his glass of grog, and such a *snooze* as the toil-worn citizen never knew!

Grouse are hatched in April, or very early in May. If there be much rain in April, or May, the broods will be small. If an early spring be followed by a hot summer, the birds will be large, and strong on the wing, at the commencement of the shooting season. If the summer be very dry, the young birds will be strong on the wing, by reason of their having to make long flights to procure water.

Grouse shooters should separate and range singly, —they should have no noisy attendants, nor any dogs that require rating. The sport cannot be carried on too quietly. If the shooter throws off before eight o'clock, which it is not prudent to do unless there are many guns on the moors, or foul weather is expected in the afternoon, he should run *only one dog as long as the heather is wet*, afterwards two, and in the afternoon three dogs. In wet weather one dog is quite sufficient. If hot weather, we advise rest from eleven to two. If the shooter have not exhausted himself during the middle of the day, he will best fill his bag in the afternoon; he may not, indeed, then find so many, but those he does find will be dispersed birds that will almost lie to be trodden on. An old shooter thus, on a dry afternoon following a wet morning, will sometimes load himself or his attendant, after the less experienced have left the moor disgusted, with scarcely a bird in their possession.

After the early part of the season, grouse seldom rise within shot in wet weather. They do not always lie well immediately on the clearing up of the weather, but require a succession of fine days.

The flight of grouse is generally about half a mile. A grouse will drop suddenly, when out of sight of the shooter, on some hill side, perhaps forty or fifty yards from the highest part. Nine times out of ten the grouse alights on a hill-side slanting from the shooter, or, in other words, on that side of the hill, or ridge, or sloping ground, which is farthest from the shooter. It is useless to attempt to range the whole of a moor,—the sportsman's time will be much better occupied in traversing the same ground over again and again, assuming he knew how to choose his ground. When ranging a moor with which he is totally unacquainted, the best thing he can do is to walk along the brow or side of a hill, (for nearly all moors are either mountainous, or broken uneven ground,) keeping about forty or fifty yards from the summit of any rising ground: not only broods but single birds alight more frequently in such a situation than in any other, especially after being disturbed. Much time is lost in ranging flats and the extreme heights of hills and ridges. The side, under the wind, of these lesser hills, which on nearly all moors is intersected by rivulets, and which has a pretty good covering of young heather, is the very best line of range that can be recommended, care b taken to keep within fifty yards from where declivity commences. By winding round the ls in this manner, the shooter does not fatigue himself near so much as by continually crossing the ravines and climbing directly up the steeps.

When the grouse-shooter throws off on an extensive moor, on which, or on the moors adjoining, there are numerous parties of shooters, we would direct him, whenever the wind is high, to make for the leeward side of the moor. Grouse do not fly with the wind on all occasions, but whenever they happen to do so, their flights are longer than when they face it; and, when going across wind, their flight has ever a tendency to the lee side. Thus, when every brood has been disturbed several times, the windward side of the moors becomes deserted, and the leeward side the resort of both game and shooters. Whatsoever species of game he is in pursuit of, the shooter will do well to keep on that side of the hill which is protected from the wind. The most unlikely place in the world to find any kind of game is a hill-side on which the wind plays. But in stormy weather the hill-top and the plain should be equally shunned,—a narrow valley, or the steep hill-side sheltered from the wind, are then the usual places of resort.

The favourite haunts of grouse, when undisturbed, are those patches of ground where the young heather is most luxuriant. They avoid rocks, and bare places where the heather has been recently burnt; except when basking in the middle of the day, when the deserted stone-pit—the craggy dell—the shaly scarp—and the steep side of the low-lying ravine should not be neglected. It is in young heather that grouse most frequently feed. They are seldom found in the very long thick heather that clothes some part of the hills, until driven there for shelter by shooters or others. It is early in the morning and towards evening that grouse are to be found in young heather. During the middle of the day the shooter should range the sunny side of the hill, and avoid plains.

Grouse do not always rise in the same manner. They either mount, like pheasants, about five yards high, and then fly off; or else they skim along quietly, almost touching the ground. When the grouse flies low, its flight is somewhat like that of the blackbird. When it rises in the manner of a pheasant, the best time to fire at it is immediately as it arrives at its height, just as it is about to make off; at that point of time when it has performed its vertical and is commencing its horizontal flight. To shoot sooner, unless the aim be taken above the bird, is to lose a chance. But, when the grouse scarcely rises out of the heather, and glides away from the shooter, as a blackbird flies, no time is to be lost, or it will be out of reach. It is generally when the shooter is near birds as they rise, that they mount like pheasants; and when he is at a distance from them as they rise, that they fly off low. When they rise perpendicularly, they make some noise with their wings, and the cock sometimes crows, and the hen cackles. On the contrary, when they flit away, scarcely clearing the *heath-peeps*, they make no noise whatever. When grouse are wild and fly low, it is quite requisite to keep a constant look-out, or they will gain a dozen yards before they are seen! Their being the same colour as the heather favours their escape.

It is usual for one party of sportsmen to give another party notice of the approach of birds by crying "mark!" The shooters whom the birds approach stand still, and the birds will not veer from their intended course; the birds are suffered to pass before a gun is brought to the shoulder. It is difficult to drop a bird approaching.

On the opening day, grouse are generally missed through the shooter being too eager, and firing too soon. This partly results from want of practice, for practice is essential to perfecting a shot. Killing a few couple of snipes previously to grousing, will bring his hand in. As the sportsman, in grouse shooting, has an opportunity of choosing his own distance when birds rise near to him, he will be more certain of killing if he let the birds fly twenty-five yards from him before he fires the first barrel, when, if he have both barrels cocked, he will have ample time to throw in the reserve barrel while the birds are within reasonable distance. In nothing is the superiority of the detonating over the flint lock more apparent than in its allowing the shooter to fire the second so soon after the first barrel. We suspect that the habit of taking the gun from the shoulder after the first barrel was fired, originated in the necessity of waiting until the smoke from the pan was blown away, which nuisance no longer exists. A person who is a decidedly bad shot should not use the cartridge in the first barrel, as the loose charge gives a larger circle at a short distance, and consequently increases the chance of killing.

No species of shooting requires the aid of good dogs more than grouse shooting, and in no sport does so much annoyance result from the use of bad ones. The best dog, perhaps, for the moors, is a well-bred pointer, not more than five years old, which has been well tutored,—young in years but a veteran in experience. The setter is occasionally used with success, but we prefer the pointer. The latter has unquestionably the advantage when the moors are dry, as it not unfrequently happens that they are in August. If a setter cannot find water wherein to wet his feet every half-hour, he will not be able to undergo much fatigue. Some sportsmen will hunt a couple of mute spaniels for grouse shooting in preference to any other team of dogs. Of course, when this method is pursued, the birds are never pointed, and the shooter must ever be on the look-out, for the game is generally sprung very near to the gun. We are not quite sure that a sportsman can be better *dogged* for grouse shooting than with a couple of spaniels and an old staunch pointer, unless he is a very dilatory shot, or is startled when birds rise unexpectedly, and requires every bird to be pointed. It is the power to bring down in good style bird after bird thus put up, that makes apparent the difference between the good shot and the indifferent one. As long as birds are pointed under the dog's nose, the distinction is not so marked.

Perhaps the best team of dogs for showing off sport on a fine day would be three high-couraged pointers that range independently before the shooter in concentric semicircles, the one within the other, —two of them should be close-beaters, bitches, perhaps, might be preferred, and the third a high-ranger; the bitches should keep, as near as may be, at the distance of ten and twenty paces respectively of the gun, and the dog at thirty. With such dogs very little game would be passed over, and birds would seldom be put up out of shot.

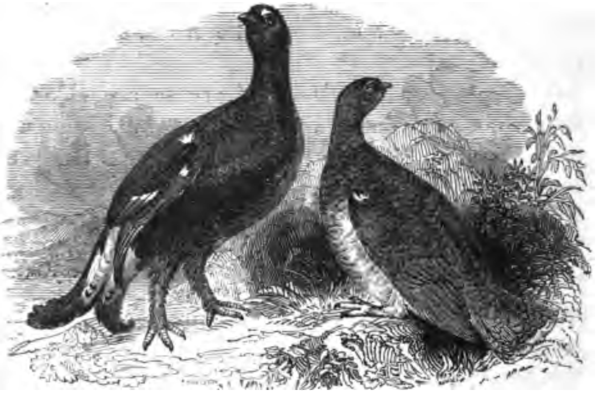
If the grouse-shooter is encumbered with several markers, one should accompany him; the rest should be stationed in all directions on the hill-tops. It is the duty of a marker to watch the birds while the shooter is engaged in re-loading, and bagging his game. When birds are scarce, it is no loss of time to follow a marked bird; but when plentiful, the shooter should not deviate from the line he has chosen. When birds are abundant, markers are a nuisance. When scarce, a marker may be serviceable, provided a thorough-bred one can be obtained —some shepherd lad, whose proficiency may be guessed at by the knowing cunning which glitters in his eye when he is told that his services are required. A youth of this description will lie down when a bird rises, put up his hands to his face, like the blinders of a waggon-horse, and mark a bird down *to an inch*, a mile off! These youths have an accommodating knack of slipping wounded birds into their pockets; or of hiding them in *peat-holes*, so that neither Turk, Tiger, nor Pathfinder, the retrievers, can wind them! Retrievers are seldom used in grouse shooting; nor are they often required, for a winged grouse does not run like a partridge, but hides itself in the nearest patch of heather, so that the shooter knows where to find the bird to a few yards. Now and then, indeed, an old cock will run, after being winged, much in the same manner as he has been used to run before the brood on the approach of danger.

However *orderly* the array of a covey—however tempting the opportunity — the partridge-shooter should not be induced to "rake" them. The grouse-shooter need not be so punctilious. The following practicable method of obtaining such a shot as will, in all probability, secure a plurality of birds at each discharge, is from one of the papers of a "Quatogenarian" in the Sporting Magazine; and as regards grouse-shooting, we think the justification of the practice is fully made out, when it is remembered that the writer is speaking of a *wet* and windy day in *November*—of that season when grouse leave the high hill-tops altogether, and resort to the braes, and broken bases of the hills, whence, on the approach of the shooter, they take flight long before he is within range, and wing round the turns of the knolls or rocks. He says, "In such cases the best way will be to station yourself previously down wind, where your dear-earned experience has led you to expect them, and send a person, or persons, to take a good circuit, and walk carefully through the lea sides and sheltered beilds of the hills. The best family shots are often to be thus obtained, and under such circumstances are perfectly justifiable, though in common shooting there is nothing I more detest doing or seeing done, than to drop more than one bird to a barrel, to avoid which the outer birds should always be fired at. But here the case is quite different; always take the middle birds,—'Father, mother, and Suke, down with them, the more the merrier,'—and this is what I term a *family* shot!"

The red grouse does not attain his full size and plumage until he has moulted twice. There is an obvious difference betwen the two-year-old birds and the one,—the latter are sometimes taken for young birds, but they may be known by the under beak being strong enough to support the weight of the body. The belly of the cock grouse is nearly black, each feather being tipped or barred with white; the white tips or bars are smaller on an old bird than on a young one. The breast and belly of the hen is a dark chocolate colour.

In September, broods of red grouse assemble together, and remain in large companies until the end of the season. They are then said to be packed. In a very hot and forward season, they may sometimes be seen in packs on the 12th of August, but that rarely occurs. If a late season, and the birds are not much disturbed, they will not pack until October. A pack varies in number from twenty to two or three hundred, or even more. When packed, the shooter can seldom approach within a hundred yards of them without resorting to some artifice. A pack must be stalked, rather than ranged for.

In winter, after the legitimate season for shooting them is past, red grouse, as also black-game, may be seen sitting in rows on walls and peat banks, early in a morning; when great numbers are killed by poachers, especially when the ground is covered with snow, at which time the keepers should be doubled, and should be on the alert day and night. Considerable expense is often incurred in watching moors in August, while in December, January, and February, the birds, when they most need protection, are left to take care of themselves. In the winter months, grouse cannot be killed in large quantities, so long as the weather remains open. After a mild winter, there is generally an abundance of grouse the next season—a proof that their great enemy is the poacher in the snow, and not the sportsman in August![*]



BLACK-GAME SHOOTING.

The blackcock—the bird of the birchen glen—becomes the prey of the fowler on the 20th of August.

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[*] In the winter snows, grouse are killed in great numbers, while sitting in rows on walls. When the weather is mild in January and

His more sober-suited lady the grey-hen finds favour with the considerate sportsman, and is spared. At the commencement of the season, black-game will suffer the shooter to approach much nearer to them than will red grouse; indeed from that day until September, they lie very well, and are very easily killed, except an old cock, which is shy at all seasons. After the young ones have moulted, they become wilder than the red birds on the open common. They may be easily approached in a wood, where they are sprung and shot like pheasants. They are not met with at any great altitude, but confine themselves chiefly to the valleys, the lesser hills, and the base of the loftier mountains. They do not frequent the central parts of large wastes so much as those parts bordering on inclosed lands or woods. Red grouse recede where cultivation advances; and they are consequently in a fair way of being banished from England. As there is a greater extent of ground congenial to black-game, there is no reason to fear their extinction. Heath-land, planted with larch, is a favourite resort; but they prefer rushy ferny ground, and glens of alder and birch, on the buds of which they feed. It might be difficult to introduce the red birds into any county where they are not found at present; but wherever there is land

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February, they pair, and are then as easily approached as partridges in September. It is then that the keepers are least on the watch, and then that the cottagers kill the greatest number of birds. It is true that a market cannot at that time be found for them, but they are deemed little inferior to fowls when boiled in the pot with a piece of bacon.

slightly sprinkled with ling, and partially planted with larch, birch, or alder, and if in the vicinity of corn-fields so much the better, black-game might be easily located. They are very destructive to crops of grain. The opening-day for black-game shooting should be the 1st of September. On the 20th of August, the young birds are so indolent that they frequently suffer the dogs to catch them, as they lie basking separately; and the shooter walks them up one by one, so that when a brood is found, the probability is that half the birds will be killed. But the great evil is that the young cocks cannot be distinguished from the hens, and they are shot indiscriminately. The blackcock is, like the pheasant, polygamous; therefore, wherever the hens are spared, the game will increase. On the 1st of September, black-game are not so forward, comparatively, as partridges; even that day would be full soon to commence shooting them. They are yearly becoming more abundant in the English plantations, and there can be no more noble addition to the park, the chase, or the forest, than the blackcock. In the lower woodlands, therefore, they should remain undisturbed until November, when the woodcocks arrive. Were this attended to, there would be splendid sport in that month, just when the pheasants and blackcocks have completed their moult, and when they are in good condition, after gleaning the stubbles.

When the sportsman meets with black-game or muir-fowl, as well as red-game or grouse, hemay distinguish the former, if old birds, by their superior size. He cannot but recognise the cock, which is jet black, marked with white on the wings, and is as large and heavy as an Essex pheasant. He will distinguish the hen and poults from the red grouse, by the length of their necks. In form and appearance, when on the wing, black-game resemble wild-ducks. They are longer birds than, and not so plump as, red grouse, which, in turn, are not so plump as partridges. The plumage of a young blackcock is nearly the colour of that of a red grouse, until the moulting season, which is in October, when he sloughs his brown coat for a suit of sable. The grey-hen and the young blackcock may be distinguished from the red grouse by the under feathers of the tail being mottled brown; those of the latter are black, as in the ptarmigan. They visit stubble-fields, or rather corn-fields, for corn is harvested late in those cold countries where the hills are covered with their native brown; whereas the red grouse is rarely known to quit the open moor, unless driven thence by men, dogs, or stress of weather. The red grouse feeds chiefly amidst the heather. Black-game will often feed, and sometimes (though rarely) the red grouse also, like partridges, in stubbles; black-game are very destructive to crops of grain. Red grouse do not frequent woods. Their nests are generally found in heather; those of black-game in rushy fields or plantations. The eggs of the former are often taken by persons collecting plovers' eggs; and as they are easily found, the temptation to pilfer but too often presents itself. A child may thus do more mischief than the most accomplished poacher.

Blackcocks, during winter, associate together aloof from the grey-hens and red grouse. The grey-hens also pack distinct from the cocks.

Red grouse are never found on moors, where water does not lie within a convenient distance in seasons of drought. Black-game seem to disregard this inconvenience; probably, being larger birds, they can endure a longer flight in search of water.

Black-game are distributed over the whole of the North of Europe. They are found, more or less abundant, in all the Northern, in most of the Midland, and in some of the Southern counties of England. Red grouse are not met with further south than Derbyshire, Cheshire, and Staffordshire. Both abound in Scotland; and in Ireland they are more plentiful than in England. The red grouse only occurs in Wales.

CAPERCAILZIE SHOOTING.

Similar to the blackcock in many respects is the capercailzie, or cock of the wood, once the native, and now the denizen of the Highland forests. The capercailzie cock weighs sixteen pounds. Speaking of this bird, as it exists in Sweden, Mr. Lewellyn Lloyd says,* "The favourite haunts of the capercali are extensive fir-woods; in coppices or small cover he is seldom or never found. The principal food of the capercali, when in a state of nature, consists of the leaves of the Scotch fir; he very rarely, however, feeds upon those of the spruces; he also eats juniper berries, cranberries, blaeberries, and other berries common to the Northern forests; and occasionally also, in the winter time, the buds of the birch, &c. The young capercali feed principally at first on ants, worms, insects, &c."

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* *Field Sports of the North of Europe.*

It was the felling of the timber, aided, perhaps, by the cross-bow, which is not ill adapted to the purpose, that exterminated this primeval habitant of the old Caledonian forests. Some years since an attempt was made to re-introduce this bird to its ancient haunts in Scotland, but without success. "It is a pity," continues Mr. Lloyd, "that attempts are not made once more to introduce the capercali into the United Kingdom, for, if the experiment was undertaken with judgment, it would most probably be attended with success; the climate, soil, &c. in Scotland, at least, not being very dissimilar, in many respects, to the south of Sweden. In Scotland, besides, independently of the natural forests, there are now considerable tracks of land planted with pines, from which trees, when the ground is covered with snow, those birds obtain nearly the whole of their sustenance." Since he wrote this, several brace of these birds have been sent over from Sweden; and, on the forest lands of the Marquis of Breadalbane, the experiment of localising them is now in course of trial, and we doubt not that the cock of the wood will become permanently established in the Scottish Highlands. The same description of country (the heaths and forests being on a more extended scale,) which suits black-game, would likewise suit the capercailzie. They occasionally breed together, the product being a hybrid which does not perpetuate its species.

"In the forest," Mr. Lloyd observes, "the capercali does not always present an easy mark; for, dipping down from the pines nearly to the ground, as is frequently the case, they are often out of distance before one can properly take aim. No. 1 or 2 shot may answer very well, at short range, to kill the hens; but for the cocks, the sportsman should be provided with much larger.

"Towards the commencement of, and during the continuance of winter, the capercali are generally in packs; these, which are usually composed wholly of cocks, (the hens keeping apart,) do not separate until the approach of spring. These packs, which are sometimes said to contain fifty or a hundred birds, usually hold the sides of the numerous lakes and morasses with which the Northern forests abound; and to *stalk* the same in the winter-time with a good rifle is no ignoble amusement."

PTARMIGAN SHOOTING.

We have now for some time traversed, with the reader, the highest hills that are covered with heather, but there are heights beyond. The Tribune exclaims,

> For liberty! go seek
> Earth's highest rocks and ocean's deepest caves!
> Go where the Eagle and the Sea-snake dwell![*]

It may be admissible in poetry to give the highest cliffs to the king of birds, but zoology assigns a lower elevation to the " eagle's birth-place ;" yes, you may ascend above the aërie of the eagle, where the croak of the raven is never heard, where the fox and the weazel but seldom disturb the lonely habitants,—the white hare and the ptarmigan. You may ascend until, in the glowing language of Mr. Mudie,* " you begin at last to feel alone, severed entirely from the world of society, of life, and of growth, and committed to the solitude of the ancient hills and immeasurable sky. The snow lies thick on the side of the summit, and even peers over the top, defying the utmost efforts of solstitial heat. There is no plant under your feet, save lichen on the rock, apparently as hard and as strong as that to which it adheres—it can hardly be said to grow—and moss in some crevice, undistinguishable from the dull and cold mud into which the storms of many winters have abraded the granite. You are above the reach of all sound from the inhabited parts of the country." * * * " A few mottled pebbles, or at least what appear to be such, each about twice the size of your hand, lie at some distance, where the decomposed rock, and the rudiments of what may be called the most elevated mountain vegetation, just begin to ruffle the surface. By and by a cloud shadows the sun, the air blows chill as November, and a few drops fall, freezing or melting in their descent, you cannot well tell which. The mottled pebbles begin to move; you throw a stone at them to show that you can move pebbles as well as the mountain. The stone hits beyond them; they run toward your feet, as if claiming your protection; they are birds,—ptarmigan,—the uppermost tenants of the island, whom not even winds, which could uproot forests, and frosts, which could all but congeal mercury, can drive from these their mountain haunts. It has often been observed, that of all the human inhabitants of the earth, the mountaineer, be his mountain ever so barren, is the last to quit; and the same holds true of the mountain bird."

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[*] *Rienzi*, a Tragedy, (1st edit.) London.

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* *The Feathered Tribes of the British Islands.* By Robert Mudie. 2d edition, 1835.

The same writer traces the different elevations at which various species of game is found, beginning with the pheasant as the tenant of the lowermost woods; the partridge, of the plain; the blackcock, of the confines of cultivation; the grouse, of the lesser hills and mountain-side; and the ptarmigan, of the snow-crowned summits.

He also adds, "in these birds we trace a sort of resemblance to the general colour of the places which they inhabit, though we know not well the cause of the colour in either case. The ptarmigan is mossy rock in summer, hoar frost in autumn, and snow in winter. Grouse are brown heather, black-game are peat-bank and shingle, and partridges are clods and withered stalks all the year round." And to continue the similitude, woodcocks are dead leaves, the streaked snipe is the marsh-reed, the pheasant is red fern, and the capercailzie is the black branch of the pine. The same may be said of footed game; the red deer, the roe, the fallow deer, the brown hare, the white hare, and the rabbit, each in their colour somewhat resemble the places they frequent.

We find the earliest birds of each kind in the warmest valleys and on the richest land,—the partridge and blackcock of the South of England arrive at full growth before those of the North. But looking at the various birds of the game species collectively, the order is reversed,—the higher, the colder the location to which they belong, the sooner does each separate kind arrive at maturity. The ptarmigan is ready for the table before the time at which it may be legally shot, the twelfth of August. Descending the hill, we find the red grouse not three parts grown at that period. A little lower, and the scarcely fledged blackcock rises almost helpless, on the twentieth of August. Lower still, on the fertile plain, the young partridge does not assume his grey mantle and purple crescent until long after the first of September. And in the warm woods the pheasant does not don his panoply of gold until the fall of the leaf.

Few are the sportsmen that climb the granite cliffs amongst which ptarmigan are found, or wade the winter snows in which those birds delight to bury themselves. A ramble thither, is a journey of curiosity or observation, rather than a sporting excursion. It is a pilgrimage to the loftiest Highland altitudes. The fowling-piece becomes converted into the palmer's staff; and the sportsman merges in the adventurer, the enthusiast, the worshipper of Nature.

CHAPTER V.

THE FARM, THE MARSH, AND THE WOOD.

PARTRIDGE SHOOTING.

THE 1st of September comes—with its bright stubbles and its harvest-homes—and one continuous fire of small arms is kept up—

> From the white cliffs of Dover to Pentland Firth,*

From sunrise till sunset! It is the tyro's, the pot-hunter's and the game-vendor's field-day. Not so much a day of sport as a day of slaughter. In some places, you shall see shooters of all trades and grades —sportsmen and poachers—one and all hurrying away over hedge and ditch, fence and fastness, charging, flashing, firing, whistling, tohoing, and down-charging! A bird is caught by the apothecary's dog, the lawyer walks coolly up and bags the bird, leaving the man of medicine to ruminate on the fable of "the oyster and the shell." The publican wounds a hare, it is chased by the dogs, caught by the parson's bitch, and without ceremony introduced into the inner pocket of his reverence's coat! A covey is dispersed—a race ensues—a steeple-chase:—juvenescence, adolescence, and senescence contend for the goal. The covey is surrounded, the birds rise, and the air is pierced perpendicularly, horizontally, and transversely! The *cheepers* cannot bide the "pelting of the pitiless storm;" but tumble over in rapid succession, or are caught by the dogs! Such was partridge-shooting once in the neighbourhood of every town and village from Land's End to John o'Groats: but a change has come o'er the spirit of the scene,—and where this havoc was once carried on, the sound of a gun is now never heard! Are sportsmen fewer?—'faith no, but birds are, and the sportsmen do not venture out—their occupation's gone in the neighbourhood of home. Nowhere now, except on land strictly preserved, is there good partridge-shooting. Sportsmen thus excluded from partridge-shooting rush to the moors, and there such scenes as we have just attempted to describe as formerly belonging to partridge-shooting are enacted amongst the grouse; but with far less success. Grouse, too, are diminishing at a fearful rate in England. The palmy days of shooting, if not gone by, are fast going—moor after moor is inclosed—marsh after marsh is reclaimed—the wood dwindles into the ornamental parterre—hill-side after hill-side is appropriated as the site of a mansion or village; the loveliest spots, unless they be the sternest and wildest, and withal inaccessible, are first chosen; and soon there will not be a quiet valley, or an *unbricked* hill in the country. The grouse lands are

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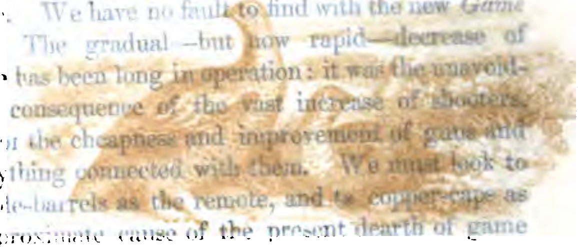
* Allan Cunningham.

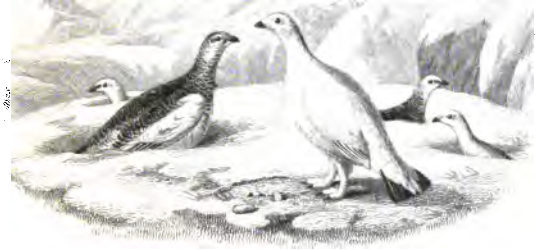
[illegible] [illegible] be [illegible] by very narrow limits. The present generation may not live to hear of the [illegible] [illegible] in England; but the next [illegible] [illegible] of the [illegible] a little later [illegible] himself will be obliged to resort to Canada or Kentucky to find game that may be said to be *wild!* Natural scenery will be remembered only in paintings and songs; and people will wonder what Cowper meant when he wrote the line,

God made the country, and man made the town.

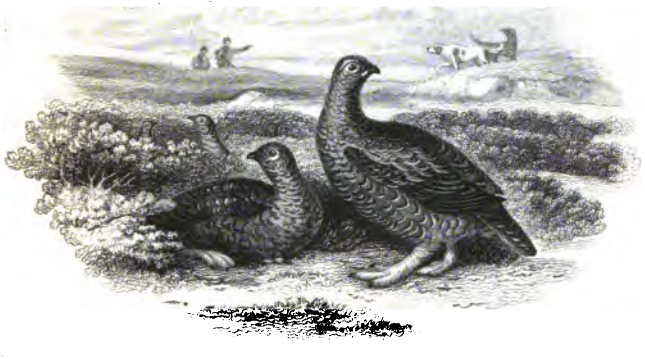
Where the forest was the admiration of their ancestors, they will see a country divided into compartments, like the squares of a chess-board, by orderly well-built fences: to say nothing of divers long chimneys, forges, and sundry other abominations. Sporting is degenerating into something like pigeon-shooting. Game is sold too; the shooter knows to a sixpence the value of the contents of his bird-bag. All these changes may be for the public good; the shooter therefore must not complain.

We do not attribute the diminution of birds and hares, as many do, to the legalisation of the sale of game. We have no fault to find with the new *Game Act.* The gradual—but now rapid—decrease of game has been long in operation: it was the unavoidable consequence of the vast increase of shooters, and of the cheapness and improvement of guns and everything connected with them. We must look to double-barrels as the remote, and to copper-caps as the proximate cause of the present dearth of game in unpreserved districts.





PTARMIGAN.



RED GROUSE

already circumscribed by very narrow limits. The present generation may not live to hear of the total extinction of grouse in England; but the next will find few south of the Tweed: a little later and the Scot himself will be obliged to resort to Canada or Kentucky to find game that may be said to be *wild!* Natural scenery will be remembered only in painting and song; and people will wonder what Cowper meant when he wrote the line,

> God made the country, and man made the town.

Where the forest was the admiration of their ancestors, they will see a country divided into compartments, like the squares of a chess-board, by orderly well-built fences; to say nothing of divers long chimnies, forges, and sundry other abominations. Sporting is degenerating into something like pigeon-shooting. Game is sold too: the shooter knows to a sixpence the value of the contents of his bird-bag. All these changes may be for the public good, the shooter therefore must not complain.

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PTARMIGAN.

RED GROUSE

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To return to our subject—partridges—a sprinkling of which, notwithstanding these dolorous forebodings, we hope will long be found in the stubble and turnip fields of "merry England." The partridge may be termed a home bird, for the shooter who resides in the country, finds it almost at his door, while it is requisite to undertake a journey, perchance a very long one, before he arrives at the grounds frequented by grouse. As it requires neither woods, nor marshes, nor heaths to afford them shelter, they are found more widely scattered than the pheasant, the woodcock, or the grouse, and hence the pursuit of them is one of the chief sources of recreation to the shooter. They are more plentiful in England than either in Ireland or Scotland. Though not so highly prized by the sportsman as the birds last mentioned, the abundance in which partridges are found, wherever they are preserved, renders the sport sufficiently attractive. At the commencement of the season, when they have not been much disturbed by persons breaking dogs, they are as tame as could be wished by the most inexpert sportsman, and at that time afford capital diversion to the young shooter, and to those rheumatic and gouty old gentlemen who,—too fond of their ease to brush the covers or range the mountains,—in the lowland valleys, "shoulder their crutch, and show how fields were won." Partridges are most plentiful in those counties where much grain, pulse, and white crops are grown. While the corn is standing,—which is no uncommon occurrence in the northern counties in September,—it is very rare that many shots can be obtained, for the coveys, on being disturbed, wing their way to the nearest corn-field, where it is forbidden the shooter to follow them, or to send his dogs in after them.

The habits of the partridge should be studied by the shooter. In the early part of the season, partridges will be found, just before sunrise, running to a brook, a spring, or marsh, to drink; from which place they almost immediately fly to some field where they can find abundance of insects, or else to the nearest corn-field or stubble-field, where they will remain, according to the state of the weather, or other circumstances, until nine or ten o'clock, when they go to bask. The basking-place is commonly on a sandy bank-side facing the sun, where the whole covey sits huddled together for several hours. About four or five o'clock, they return to the stubbles to feed, and about six or seven they go to their jucking-place, a place of rest for the night, which is mostly in aftermath, or in a rough pasture field, where they remain huddled together till morning. Such are their habits during the early part of the season; but their time of feeding and basking varies much with the length of the days. While the corn is standing, unless the weather be very fine or very wet, partridges will often remain in it all day; when fine, they bask on the outskirts; when wet, they run to some bare place in a sheltered situation, where they will be found crowded together as if basking, for they seldom remain long in corn or grass when it is wet. Birds lie best on a hot day. They are wildest on a damp or boisterous day.

The usual way of proceeding in search of partridges in September is to try the stubbles first, and next the potato and turnip fields. Birds frequently bask amongst potatoes or turnips, especially when those fields are contiguous to a stubble-field. The best partridge shooting is obtained in potato and turnip fields. It not unfrequently happens that potatoes or turnips are grown on a headland in a corn-field; in that case the headland will be a favourite resort of birds.

After the middle of October, it is ever uncertain where birds will be found; the stubbles having been pretty well gleaned, birds do not remain in them so long as in the early part of the season. When disturbed at this time, they will sometimes take shelter in woods, where they are sprung one by one. The best shots that can be obtained at partridges in winter, are when the birds are driven into woods.

When a covey separates, the shooter will generally be able to kill many birds, but late in the season it is seldom that the covey can be broken. In November and December the shooter must not expect to have his birds pointed, but must remain content with firing at long distances. In the early part of the season, when the shooter *breaks* a covey, he should proceed without loss of time in search of the dispersed birds, for the parent birds begin to call almost immediately on their alighting, the young ones answer, and in less than half an hour, if not prevented by the presence of the shooter and his dogs, the whole covey will be re-assembled, probably in security in some snug corner, where the shooter leasts thinks of looking for them. As the season advances, birds are longer in re-assembling after being dispersed. It is necessary to beat very closely for dispersed birds, as they do not stir for some time after alighting, on which account dogs cannot wind them until nearly upon them, especially as they resort to the roughest places when dispersed. Birds dispersed afford the primest sport. The pointing is often beautiful, the bird being generally in a patch of rushes, or tuft of grass or fern, and close to the dog. When a bird has been running about some time, dogs easily come upon the scent of it; but when it has not stirred since alighting, and has perhaps crept into a drain, or run into a hedge-bottom, or the sedgy side of a ditch, no dog can wind it until close upon it, and the very best dogs will sometimes flush a single bird. In the month of October, and afterwards, the shooter will find it difficult to approach within gun-shot of a covey, nor can he disperse them, except by firing at them when he chances to come close upon them. Should he then be so fortunate as to disperse a covey, he may follow them leisurely, for they will then lie several hours in their lurking-place, which is chosen with much tact, as a patch of rushes, a gorse bush, a holly bush, the bottom of a double bank fence, or a coppice or wood. The length of time that will transpire before a dispersed covey will re-assemble, depends, too, on the time of the day, and state of the weather. In hot weather, they will lie still for several hours. A covey dispersed early in the morning, or late at night, will soon re-assemble. A covey dispersed between the hours of ten and two, will be some time in re-assembling. A covey found in the morning in a stubble-field, and dispersed, will next assemble near the basking-place. A covey dispersed after two o'clock, will next assemble in the stubble-field at feeding time. A covey disturbed and dispersed late in the afternoon, or evening, will next re-assemble near the jucking-place. A covey being disturbed on or near to their jucking-place, will seek a fresh one, perhaps about two fields distant; and if often disturbed at night on their jucking-place, they will seek another stubble-field to feed in, and change their quarters altogether. The most certain method of driving partridges from a farm, is to disturb them night after night at their jucking-place, which is usually in a meadow, where the aftermath is suffered to grow, or in a field rough with rushes, fern, thistles, or heather, adjoining to a corn-field. When a covey is dispersed on a dry hot day, it is necessary to search much longer, and beat closer, for the dispersed birds, than when the day is cool and the ground moist. A dog should be only slightly rated for running up a bird on a hot day.

The shooter, on entering a field, should make it a general rule, provided the wind or nature of the ground do not lead him to decide on a contrary course, to beat that side which is nearest the covers; or, if there be no neighbouring covers, he should beat round the field, leaving the centre of the field to the last. In hot weather birds frequent bare places, sunny hill-sides, or sandy banks, at the root of a tree, or hedge-bottom, where there is plenty of loose loam or sand which they can scratch up. In cold weather they will be found in sheltered places. In cold windy weather those fields only which lie under the wind should be beaten. The warm valleys, the briary cloughs, and glens not over-wooded, but abounding in fern, underwood, and holly trees, and also those steep hill-sides which lie under the wind, are then places of resort. Heights and flats must be avoided, except where there are small enclosures well protected by double hedges, under the shelter of which birds will remain. The shooter who beats the south or west side of a hedge, will generally obtain more shots than he who beats the north or east side. Unless there be continual rain, or it be the depth of winter, birds will visit their basking-place some time in the course of the day, whether the sun shine or not. The basking-place is generally, but not invariably, on the sunny side of the hedge. Birds may be most easily approached in fine weather. All kinds of birds lie better in small enclosures than in large ones, that is, when the cover in each is alike. It need scarcely be added, that the more bushy the brambles, or the higher the grass, rushes, or heather, the more closely will lie the game.

It is almost as necessary to the shooter as to the mariner to observe the wind. Whenever it is practicable, he should beat up wind. On entering an enclosure his eye will tell him where the best beat lies. The field may be so large that it will be necessary to walk across it several times. The shooter having discovered what he supposes to be the best beat, and having learned the way of the wind, should, as he walks against the wind, traverse the best ground in order to give the dog the wind; for the dog will not only find more game by beating up wind than down, but the birds will lie better. When the shooter is obliged to walk down wind, he should traverse the most unlikely ground, always reserving that portion of the field next cover, or that which seems to possess some local advantage for his up-wind beats.

When the shooter has been long accustomed to a dog, he can tell by the dog's proceeding, whether game is near or not when pointed, or whether the birds are running before the dog. If he suspect them to be running, he must walk up quickly before his dog, for if he stop or appear to look about him, the birds instantly rise. Whenever it is practicable, unless the birds be very tame and his dogs young ones, the shooter should place himself so that the birds may be between him and the dogs. They will then lie well. The moment a dog points, the first thing to be done is to cast a glance round to ascertain in which direction the covers and corn-fields lie; the next is to learn the point of the wind; the shooter will then use his endeavour to gain the wind of the birds, and to place himself between them and the covers, or otherwise avail himself of other local circumstances. All this must be done in a moment, and it requires some judgment. A person who knows how to walk up to his birds will obtain more shots than one who does not, especially in windy weather. Birds will not only allow the shooter to approach nearer to them when he faces the wind, but they present on rising, a fairer mark.

When the legs of a bird fired at fall, it is almost a certain proof that it is struck in a vital part. A bird so struck should be narrowly watched, when, in most instances, it will be seen, after flying about a hundred yards if a grouse, or fifty yards if a partridge, to tower or spire in the air, and fall down dead. When only one leg falls, the bird should be watched, but in the latter case, it generally happens that the leg or thigh only has been struck. Any bird that flinches, on being fired at, or whose feathers are in the least disordered, should be marked down, and followed. Grouse more frequently fly away wounded than partridges. Grouse are often recovered several hundred yards from the gun.

Until November or December, young grouse, black-game, partridges, and pheasants, may be distinguished from old ones by the lower beak not being strong enough to bear the weight of their bodies. The lower beak of an old partridge is strong enough to sustain the weight of a brace of birds; but a young bird cannot be raised by the lower beak without the lower beak bending under the weight. The head of a buck-hare is larger, and the neck and ears are shorter than of a doe. Old hares may be distinguished from full-grown young hares by the strength of their jaw-bones, or the closeness of the knee-joint of the fore-legs.

The number of birds in a covey varies much, perhaps the average may be from ten to fifteen. In some years, when the coveys are large after a fine hatching season, it is not uncommon to see upwards of twenty birds in a covey; and sometimes after a wet season, ten birds may be deemed a fair covey. Birds are most numerous after a dry summer. When there are thunder-storms about midsummer, great numbers of young birds are drowned. The young birds have many enemies besides the elements, such as cats, young dogs, hawks, foxes, and vermin of different descriptions. When the eggs are taken, or the young birds destroyed soon after leaving the shell, there will be a second hatch. Sportsmen often meet with second hatches in September, when the old birds rise screaming, and generally alight within fifty yards, as if to induce the young birds to follow. In that case the fair sportsman will not fire at the old birds, but will call in his dogs and leave the ground. At such times he should look well after the young dogs, as, when they see the birds running, they are apt to snap up such of them as cannot get out of the way. The very young birds are called cheepers, from their uttering a scream as they rise. Full-grown birds never scream as they rise, except when the young ones are helpless, nor do young birds after they are large enough for the table.

There are shooters who acquire an unsportsmanlike habit of firing at a covey immediately as it rises, before the birds are fairly on the wing, and thus, without aiming at any individual bird, bring down two or three. And sometimes they will make a foul shot by flanking a covey; the birds being on the wing, come upon them suddenly, and make a simultaneous wheel; they take them on the turn, when, for a moment—and but for a moment—half the covey are in a line, and floor them rank and file. These are tricks allied to poaching, and almost as reprehensible as shooting at birds on the ground, which is nothing less than high treason, unless the shooter is upon his own land, where he may plead his right to do what he will with his own—the prerogative of an Englishman!

The cock partridge is distinguished from the hen by the brown feathers which form a crescent, or horse-shoe, as it is sometimes called, on the breast.

The pointer is decidedly the best dog for partridge shooting.

Bustards and quails are so rare in this country as scarcely to require notice here. They are, however, valuable acquisitions to the game-bag. As the bustard cannot be approached unless the shooter take advantage of some adventitious circumstances, it is seldom an object of pursuit to the sportsman. Bustard shooting commences on the 1st of September, and ends on the 1st of March. The quail would be much sought after if abundant.

THE PHEASANT.

Many home-bred shooters imagine that pheasant shooting is the *ne plus ultrà* of sporting. It has something of aristocracy and luxury associated with it, and it is doubtless splendid sport. It commences when the leaves of the forest are tinged with every varying tint: and the old woods never look so noble as in their autumnal garb. The pheasant-shooter is often amid scenery,

> Where looks the cottage out on a domain,
> The palace cannot boast of![*]

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[*] Sheridan Knowles.

The bird, arrayed in mail of gold, rises in some deep-wooded glen, where the sound of his wings may be compared to thunder, such the effect of reverberation in the echoing valleys! the golden plumage glitters in the sun! the report of the fowling-piece is like that of a small piece of ordnance! the blue neck falls instantly under the burnished wing! the pinions close! and the next moment, the "whirring pheasant," the pride of the British woods, lies bleeding on the ground! the long-rolling echo dies in the distance, and the stillness of Arcady again reigns around! Such is pheasant-shooting; but with all its attractions, it is not, in the opinion of many sportsmen, to be compared with the pursuit of the grouse through the trackless heather, or of the scarcer woodcock in the winter woods. It is the rarity and difficulty of attainment of a bird that renders the acquisition of it desirable to the true sportsman. He does not estimate the value of a blackcock, which he may have had the good fortune to bag in November, by the current price of the day.

The pheasant is the most splendidly arrayed of undomesticated British birds. It is deservedly in high request among sportsmen, and it claims the first attention of the game-preserver. The numberless plantations and coppices which are everywhere springing up, afford yearly additional shelter. The pheasant prefers woods of oak and beech, that it may feed on the acorns and mast. The fine old woods consisting of these trees may perhaps be diminishing, but they are more than replaced by plantations of larch or other quick-growing trees. Pheasants generally choose the larch or spruce fir to roost in, and plantations of this description, if near corn, turnip, or potato fields, afford sufficient cover for them. They are, in many counties, allowed to become so numerous, as to do serious mischief to the labours of husbandry.

It is not usual to kill the hens wherever pheasants are strictly preserved; but it is necessary to kill the cocks where they are too numerous. Pheasants do not pair. As it is better that there should be but few cocks, the shooters being able to single them out and kill them, tends ultimately to the increase, and not to the diminution of the number of birds in cover. At the commencement of the season the shooter will frequently put up a nide of pheasants, but in the after part of the season he will oftener find solitary birds. Pheasants will occasionally wander a considerable distance from the wood to which they belong, especially during winter in search of food, and in wet and foggy weather. The pheasant basks at the root of a tree, or under a hedge, in the same manner as the partridge, but each bird nestles itself separately. Pheasants approach nearer in their habits and appearance to domesticated poultry than any other kind of game. Pheasant shooting is most destructive where the plantations are not more than forty yards wide, when the shooters remain on the outside, while the beaters and dogs put up the game within. The pheasant shooter does not expect set shots; his object is to cause the birds to rise as near to him as he can. Having no notice of them, he should ever be on the alert for snap shots.

A short double-barrelled fowling-piece, of wide bore, is preferable to a long one. The shot should be large, and it is well to use plenty of it. A close shooting gun is not to be recommended to the pheasant shooter. The birds should rarely be fired at in cover when more than thirty yards from the gun, or they will escape wounded in the underwood. They are generally brought down within twenty yards from the gun. Pheasants are most plentiful in Norfolk, Suffolk, and some of the adjoining counties. There are some in every county in England, and in most of the counties in Scotland. A perfect bird has a white annular space on the neck, but this mark is mostly wanting.

The pheasant makes a considerable noise when rising, sufficient to unnerve the young and over-anxious sportsman. The bird should be allowed to rise clear of the bushes, and to its full height, before the shooter fires, or it is probable he will aim too low; and again, the short fan-like feathers on either side of the tail appear, as the bird is rising, to be part of the bird, making the body seem longer and larger than it really is; and this circumstance, together with the rapidity of the movement of the bird when rising, is the cause of the shooter firing too low. The aim should always be at the head, unless the bird is crossing, and then well forward. Firing too soon, lest the bird should be out of reach, is a very common error, particularly with young sportsmen.

The best time to find pheasants out of cover is the first hour after sunrise, while they are feeding in the adjacent stubble and turnip fields. When they have done feeding, a few stragglers, instead of returning to the cover, will remain under the hedges of the fields in which they feed. At noon, when the sun shines brightly, a few will venture out of the woods, and bask under thick hedges, or holly-bushes, or amongst brambles, but seldom at any great distance from cover. During a dense fog, pheasants venture farthest from the woods. While the leaves are upon the trees, they seldom wander far from the place where they were hatched, or the wood or plantation to which they may be said to belong.

At the beginning of October, pheasant shooting is combined with hare and partridge shooting, the sport being conducted on the outside of the larger and denser covers, or in the brakes or coppices, where the foliage does not intercept a view of the rising birds. The young ones are then by no means full-grown, nor have they attained that brilliancy of plumage which they afterwards acquire. They are more alarmed at the dog than at the shooter, and consequently to avoid the former will fly almost in the face of the latter. Towards the end of October, when the leaves fall, and the brambles decay, the sportsman ventures within the covers.

In November, pheasant shooting is combined with woodcock shooting; the trees are leafless, the sportsman's gap and the gun road are open; and if, in addition to pheasants and cocks, there should be black-game in cover, there can scarcely be better diversion. In that month cocks are abundant; and pheasants and black-game are well-grown, well-fed, and in full plumage—the pheasant is scaled with gold to the

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PARTRIDGES.

PHEASANTS.

throat, and the [illegible]
Shooting then requ[illegible]
the contents of his [illegible]
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Beaters are almost as service[illegible]
shooting: they should be sent into the [illegible]
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round him. When beating woods, [illegible]
shooter will generally place himself [illegible]
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bottom out; and, if [illegible]
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himself between it and the adjacent [illegible]
probability, where not [illegible]
every pheasant will endeavour to [illegible]
same direction.

throat, and the blackcock is feathered to the foot! Shooting then requires perseverance and labour, but the contents of his bird-bag will amply compensate the sportsman for both, if he regard the length of the pheasants, the number of the woodcocks, and the weight of the blackcocks. November, when the weather is favourable, is unquestionably the best month for cover-shooting. A brace of full-feathered November pheasants, to the true sportsman, are worth a bagfull of October poults. Pheasants and black-game do not pair, like red grouse and partridges. It is unsportsmanlike to kill either a grey-hen, or a hen-pheasant. The pheasant is a strong bird, and requires a heavy blow, to disable him from running when brought down.

Beaters are almost as serviceable as dogs in cover-shooting; they should be sent into the thickest and most impervious parts. The shooter who chooses an open beat, in a part where little game is expected to be found, will kill more than he who is entangled in hollies and brambles, though the birds be rising all round him. When beating woods, the judicious shooter will generally place himself well forward, and so that he can have a distinct view of all birds that rise or fly past, within shot of him, and in those open glades, where the footed game may be seen bolting out; and, if local circumstances permit, he will, before the cover is completely beaten, place himself between it and the adjacent woods, as in all probability, where not intercepted by the shooters, every pheasant will endeavour to make off in the same direction.

The setter, or cock-dog, is to be preferred to the pointer for pheasant shooting. Pheasants will sometimes lie very close, so that it is with great difficulty they can be made to rise; therefore dogs that will dash into the thicket are most useful. For cover-shooting, where game is abundant, retrievers are indispensable. Many birds are recovered by them that would otherwise be lost; and much time is saved.*

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* Mr. Waterton's observations on the pheasant are particularly valuable. After exploring the wild woods of Guiana and combating crocodiles and boa-constrictors on the banks of the Essiquibo, he retired to his patrimonial estate in Yorkshire, whence he has banished the tube of the sportsman and gamekeeper, and where, in his own words, he has "shut the temple of Janus, and proclaimed undisturbed repose to those of the feathered race which come to seek for shelter." He consequently enjoys as good, perhaps better, opportunities than any other individual, of observing the habits of many of our British birds in a state of quiescence. He thus writes on the pheasant; but the following is merely a short extract:—

"The more we look into the habits of the pheasant, the more we must be persuaded that much more attention ought to be paid to it than is generally paid to other kinds of game. The never-failing morning and evening notice which it gives of its place of retreat, together with its superior size, cause it to be soon detected and easily killed." * * * "The fowling-piece of the nocturnal poacher is the most fatal weapon used for its destruction. The report of a gun, or a clap of thunder during the night, will often cause the pheasant to begin to crow, as I have already stated; and this greatly endangers their safety. When once they are frightened from their roost, they never perch again during the remainder of the night; but take refuge among the grass, and underneath the hedges, where they fall an easy prey to the cat, the fox, and the stoat. A poacher armed with a gun finds a cloudy night fully as good for slaughter as one in which the moon shines; and, if larch trees grow in the wood, to these he resorts; knowing, by experience, that the pheasant prefers this kind of tree to any other." * * * "Food and a quiet retreat are the two best offers that man can make to the feathered

HARE SHOOTING.

Hares remain in growing corn until the operation of the sickle compels them to seek some other shelter.

race, to induce them to take up their abode on his domain: and they are absolutely necessary to the successful propagation of the pheasant. This bird has a capacious stomach, and requires much nutriment; while its timidity soon causes it to abandon those places which are disturbed. It is fond of acorns, beech mast, the berries of the hawthorn, the seeds of the wild rose, and the tubers of the Jerusalem artichoke. As long as these, and the corn dropped in the harvest, can be procured, the pheasant will do very well. In the spring, it finds abundance of nourishment in the sprouting leaves of young clover; but from the commencement of the new year, till the vernal period, their wild food affords a very scanty supply; and the bird will be exposed to all the evils of the vagrant act, unless you can contrive to keep it at home by an artificial supply of food. Boiled potatoes (which the pheasant prefers much to those in a raw state) and beans are, perhaps, the two most nourishing things that can be afforded in the depth of winter. Beans, in the end, are cheaper than all the smaller kinds of grain; because the little birds, which usually swarm at the place where pheasants are fed, cannot swallow them: and if you conceal the beans under yew or holly bushes, or under the lower branches of the spruce fir, they will be out of the way of the rooks and ring-doves. About two roods of the thousand-headed cabbage are a most valuable ac-

When driven from their summer quarters, they betake themselves to the woods, or lie concealed under hedges or bushes, or on the steep sides of brakes or cloughs where there is plenty of cover, and sometimes in aftermath; all which situations they in a great measure abandon when the autumnal leaves begin to fall. Their next location is in patches of grass, fern, heather, gorse, brambles, or rushes, where they are to be found all the winter, though the best place to look for them in November is the stubble-field, where they will not unfrequently be also found in October and December. In January they are often met with in the fallow fields. Should the weather be warm after the 10th of January, they will be found in the vicinity of marshes, or in other low moist situations. In short, to find hares, the hedges should be beaten in September, covers in October, stubbles in November, parks, pastures, and uninclosed grounds in which there is plenty of fern, gorse, rushes, or brambles, in December, and fallows and marshy fields in January.

quisition to the pheasant preserve. You sow a few ounces of seed in April, and transplant the young plants two feet asunder in the month of June. By the time that the harvest is all in, these cabbages will afford a most excellent aliment to the pheasants, and are particularly serviceable when the ground is deeply covered with snow." * * * "Next to the larch, this species of tree is generally preferred by the pheasants for their roosting place; and it is quite impossible that the poachers can shoot them in these trees. Moreover, magpies and jays will resort to them at nightfall; and they never fail to give the alarm, on the first appearance of an enemy. Many a time has the magpie been of essential service to me in a night excursion after poachers."—*Essays on Ornithology*, by Charles Waterton, Esq. 2d edit. Lond. 1838.

Leveret shooting often commences with grouse shooting, on the 12th of August, though it is not uncommon, nor is it considered unfair, to kill them during the summer months. Hares are not in season until September. The shooter should desist from killing them in February, but he is not prevented from killing them at any season, by any legislative enactment, if he have taken out a game certificate. It is the prescriptive law of the chase, held sacred by sportsmen, that prevents him.

The shooter should fire well forward at a hare, and not too high. He should not fire at a long distance, as the probability of his wounding her would be greater than that of killing her. If running direct from him, a hare should not be fired at unless within twenty-five paces from the gun, or she will often run off, though severely wounded in the hind-quarters. A beater will render essential service to the shooter in quest of hares, in the early part of the season; the beater walks on the contrary side of the hedge to the shooter, and a few yards in advance, so that the hare, to avoid the former, jumps out on the side of the latter. When beating hedges in the vicinity of covers, the shooter should take care to place himself on that side nearest the covers. When shooting at the edge of a cover, if the hare fired at is not quite deprived of the use of her legs, it would be advisable to fire again immediately, for should she crawl through the hedge, the chances would be against her being retrieved.

RABBIT SHOOTING.

Rabbits are alternately deemed game and vermin. They are sometimes shot for sport, sometimes for profit, and sometimes on account of the mischief they do to trees and other vegetation. They sometimes seat themselves all day long, after the manner of hares, but more commonly they remain the greater portion of the day in their burrows. As they are shy of approach, and run under ground on the least alarm, the shooter frequently finds it expedient to hide himself at a little distance from the warren, and wait until they come out. Where rabbits are numerous, as in most warrens they are, some will be continually playing within a few yards of the entrance of the burrows, and when found in such situations, (for they are very tenacious of life,) they should be struck very hard, or they will contrive to crawl, or rather roll into their earths before the shooter can pick them up. It is astonishing what efforts they will make to escape, though three legs be broken, when near the entrance of a burrow. It is of little use firing at them when they are more than twenty paces distant from the gun. Rabbits afford more what are termed snap shots than any other game, as they are mostly found in or near to plantations, or amongst brambles, hollies, gorse, or deep fern, in places of extreme difficulty. It requires a quick eye and steady hand to stop a rabbit running across furrows, or over uneven ground. Rabbits for sale, or when destroyed as vermin, are oftener taken by means of ferrets and nets, than killed by the gun. It would be well that a companion or servant should lead a dog in a slip,—a terrier is as good as any, to be loosed the moment the gun is fired; thus many a rabbit will be secured that would else have run into its hole. When earthed, it frequently happens that a rabbit is not able to crawl more than three or four feet deep from the surface, where it dies; the dead rabbit may then be recovered by thrusting a bramble down the hole, and twisting it in the fur. The best time for rabbit shooting is in the evening; or during sunshine after a shower, when great numbers of the rabbits venture from their burrows.

SNIPE SHOOTING.

There are three kinds of snipes, viz. the solitary or double snipe, the full or whole snipe, and the jack or half snipe. The first is a very scarce bird, and the last is considered to be scarcely worth powder and shot. It is the full snipe which principally engages the shooter's attention.

Snipes, like woodcocks, are migratory; but a few remain on our marshes, and in the neighbourhood of fresh water springs during the summer months. Those that have not been summer-sojourners in this country begin to make their appearance in October. In the inland counties they are, like woodcocks, first seen on the moors. They are most plentiful in the month of November, when they are to be found in the valleys and on the marshes. December is also a prime month. They will be found in January until the frost breaks up. Upon the breaking up of the frost in January or February, they congregate in great numbers, on the moors and downs, when they can seldom be approached by the shooter. The snipes that remain during summer rear their young on our marshes. The season for snipe shooting is not defined or limited by any legislative enactment; but it is unsportsmanlike to shoot snipes between February and the 12th of August.

The jack snipe makes its appearance contemporaneously with the woodcock, except that it is not seen in March. It is so diminutive a bird as to be scarcely worth the sportsman's notice. It may afford sport to the tyro, and the shooting at it will teach him how to bring down the large snipe, for its flight is nearly similar, but much slower.

The common or full snipe is a shy bird when in company, but when alone will allow the shooter to approach within a dozen paces of it before it springs. We find it best to shoot as soon as possible. A snipe is brought down with less difficulty at from fifteen to twenty paces than at any other distance. The aim is thus taken just before the bird begins to make its cross flights, but before it has attained its full speed. The irregularity of its flight is of little consequence during the first and second twirling, before the bird is safely on the wing, since its flight is then comparatively tardy. But let the snipe fly ten yards from whence it sprang,—let it be, for instance, twenty-five paces distant from the gun, it is then at the top of its speed, and in the very midst of its sidelong, elliptical gyrations, and more than a match for the majority of shooters, especially if the day be windy. A snipe killed at fifteen or twenty paces distance, with No. 7. shot, will seldom be struck by many pellets, being generally three or four inches from the centre of the cone which the shot forms as it flies, which is very different from being in the exact centre. A section of the body of a snipe does not present a surface as large as that of a penny-piece. If any person will fire at a target at fifteen yards distance, he will find that a snipe would not be cut to pieces even at that distance, unless it chanced to be precisely in the centre of the charge as thrown. When speaking of a snipe presenting no larger a surface as a mark than a penny-piece, we, of course, mean a snipe flying directly from the shooter. It would be imprudent to shoot at a snipe flying across at less than twenty paces distance, as it then presents more than double the surface of one going straight from the shooter. Twenty-five paces is the distance we should prefer for a cross or oblique shot. At thirty, or even at twenty-five yards, unless the barrel throws shot remarkably close, there are interstices in the charge as thrown in which a snipe flying direct from the gun would escape untouched. Provided the flight of a snipe were equally steady at all distances, and that in every instance the shooter could choose his own distance, a snipe would have least chance for its life at twenty yards. But there are two points to be attended to in determining the proper distance: the flight of the bird—and the manner in which the shot is thrown. In snipe shooting the latter is subservient to the former.

The common snipe occasionally found on heathery and rush-clad hills, as well as in the enclosed grounds, is the same as the gregarious bird of the marsh.

The setter is the best dog for snipe shooting.

WOODCOCK SHOOTING.

Cocks arrive in England in October and leave in March. They are to be met with in abundance in covers near the sea-coast in October; towards the end of that month they are frequently found on moors and downs; and in the woods in November, December, and January. November is the prime month. They are rarely to be seen far from the sea in February. In March they will again be found in some of the inland covers, but not so plentiful as in November. Cocks remain a very short time in the inland covers, in March, ere they leave them for the coast, preparatory to their departure from British shores to their summer haunts, the Norwegian woods or marshes. Their movements are very uncertain, as are those of snipes, their arrival and disappearance being sometimes equally sudden. Changes of the weather and the moon influence their movements.

There is a proverb current among sportsmen, that to kill a woodcock is to perform a day's work, which doubtlessly originated in the circumstance of a woodcock being seldom found until a very large extent of wood has been closely beaten. In the month of November, however, when woodcocks are most abundant, it would not be a difficult task, according to that standard of labour, to do the work of a week in a day, in any noted cover, for every cover frequented by cocks acquires a notoriety which it seldom loses, since any wood well frequented with cocks one year, has generally a fair supply the next. But whether the same cocks that frequent a wood this year, return the next, with their offspring, or whether an entirely new set of occupants take possession, we leave the ornithologist to decide. A certain description of woods are seldom known to fail of woodcocks during the winter months; these woods or plantations are such as are swampy, or have a stream of water running through them, or woods abounding in springs, or where, from the nature of the ground, or want of draining, the top water encourages the growth of moss. The woodcock is rarely found in woods where moss is not abundant. During a frost, cocks are found near fresh water springs; at other times, they are most commonly flushed in the open glades of the densest woods, or rather in those parts of the woods not choked up at the bottom with fern, rushes, or brambles, but where they can freely run about, and in those parts where willows, oziers, hazel-trees, or crate-wood is plentiful. In such places it will readily be ascertained whether there are cocks or not, by the borings in the moss or dead leaves, and by the chalkings.

A cock will seldom fly far until it has been fired at several times: it should, therefore, when practicable, be marked down. By a judicious system of marking, many successive shots may be obtained at the same bird. It is seldom that the skilful shooter flushes a cock, which, with the aid of markers, he does not eventually kill. The difficulty of woodcock shooting arises, for the most part, from the birds being flushed in the thickest part of woods, and contriving to wing their flight through the trees in such a manner as to baffle the sportsman's aim. After being fired at in a wood, cocks will frequently alight amongst hedge-rows on the outskirts, especially under a hedge running close to and parallel with a water course, when they are easily killed, as they will not rise until the shooter is close upon them; and their flight is not difficult to master when there are no trees to obstruct the aim.

A shooter of the south of England, who has not opportunities of grouse shooting, deems cock shooting the perfection of his art; but he considers himself more than repaid for his toil, if he bag a couple or two. Combined with pheasant and blackcock shooting, it is glorious sport.

As cocks are birds of passage, and their tarriance in our covers is of uncertain duration, permission to shoot them is often given to persons whose honour can be depended upon not to kill pheasants. To any but a real sportsman this is a tantalizing employment; the pheasants rise before him every fifty yards, and he may perhaps not meet with more than a couple of cocks in a day.

Spaniels are the best dogs for this sport: they give tongue when close upon game, and so allow the shooter notice, in a situation where he could not see a pointer or setter.

Formerly any one who was an adept at bringing down a woodcock, was certain of the enjoyment of a considerable local reputation as a shot, and he deserved it. Place one of their long, heavy, single-barrelled pieces, furnished with an ancient lock, flint of course, in the hands of a modern shooter, let him charge with powder similar to that used in the early days of George the Third, and take his chance in a tangled brake, where the cock can make play among the branches for its life, and he will readily believe that killing a cock in those days was a real trial of skill. A short light detonator is thrown upon the bird, the trigger is drawn, and the shot reaches the mark in an instant; so speedy is the whole process, that it is scarcely necessary to make any allowance for the motion of the object, when attempting snap shots at short distances; but, with the fowling-piece and ammunition of the period we are speaking of, it was necessary to take aim half a yard above or before the object moving, for a bird would fly that distance at least, after the trigger was drawn, and before the shot reached it; or if it made a sudden turn, the shot swept past it, as a clumsy over-reaching greyhound will pass a hare as she turns. Besides the less chance of killing with one of those long heavy guns, the shooter would not fire half so often as with a light one; so much more time being necessary to bring up the piece and to calculate the requisite allowance, the bird would generally be behind the next tree before the gun would be at the shoulder. Such was the slowness of ignition, that wild-fowl would take alarm at the flash from the pan, and dive out of harm's way ere the shot reached the water. In all shooting, whether in the open or in cover, a deal depends upon where the shooter places himself,—a knowledge of this part of his art will enable him to obtain twice as many fair shots as his uninitiated companion. When shooting in high covers, the sportsman should push on hastily through those parts where, though very likely for game, he cannot command a view of it should it rise; but whenever he comes to a glade that commands a view in several directions he should wait some time while his dogs beat around him, and his companions, buried in brambles and brushwood, pass him. It is often advisable to follow a footpath in a wood, particularly where ground shots are expected.

CHAPTER VI.

THE BEACH, THE RIVER, AND THE FLOOD.

WILD DUCK SHOOTING.

Except during a severe frost, wild ducks are seldom met with in the inland counties any where but on large pools and reservoirs, where they can only be approached by having recourse to some stratagem, as waiting in a shed on an island or the bank of a pool, or by stalking behind a horse trained to the purpose.

When the pools are frozen over, wild ducks are found on rivers, wells, and brooks, or in shallow drains and gutters wherein there are springs of fresh water and plenty of water-weeds, amongst which they can wade and feed. The flights being broken, ducks are found singly or only few in number, and are consequently easy of access, and may be shot with a common fowling-piece, the size of shot not being less than No. 2. For this description of shooting, the gun should be well charged with powder, and not over-weighted with shot. Wild-fowl are so fortified with down on some parts as to resist any but hard-stricken shot. Their back is the most vulnerable part, and all kinds of wild-fowl present it to the shooter as they rise. They are also easily brought down when they present a cross shot, but when approaching it is not advisable to fire at them. As the shooter pursues the course of a small winding river or brook, he should move on as noiselessly as possible, keeping, if practicable, at such distance from the bank that he can command a view of the surface of the water not more than twenty yards before him; or else keep out of sight of the water, except at every turn, when he should appear suddenly on the bank. When there are hollow banks, and willows overhanging the water, the shooter may occasionally make some noise and look carefully among the willows, where else a solitary duck might sometimes let him pass her. A mallard is readily distinguishable, but not always a duck, the latter being so near the colour of the bank. If a dog accompany the shooter it should follow at heel. The earlier in the morning the better for this sport, though in a mist, during a frost, wild ducks will remain in the brooks and gutters all day. The shooter should first follow the course of the river to some distance, and take the brooks and sedges afterwards.

The shooter often waits near a fresh water spring for the coming of ducks, on the verge of night. With his back to a tree or bank he is sufficiently concealed. The ducks, before alighting, fly round their feeding place several times, each time contracting their circle, the shooter, therefore, should not be in haste, as a near shot is desirable at night; he should take care, however, to fire before the bird is below the sky-line, or he will not see it distinctly enough to take a correct aim. If it be a dark evening, he need only wait about a quarter of an hour, the last quarter of an hour wherein he can see to shoot; but if moonlight, he may wait an hour, during which time, and sometimes even longer, ducks will be constantly winging past him.

Ducks may be walked up on a moonlight night, and killed when above the sky-line, as easily as during day. The objection to night shooting is, that birds are often lost.

There are several kinds of wild-fowl, such as the water-hen, which will dive rather than fly away when disturbed. They are, for the most part, clumsy birds on the wing, and are killed without difficulty when they can be made to rise. When shot at swimming, the shooter should take aim and fire instantaneously, or they will be under water while he is drawing the trigger.

WILD-FOWL SHOOTING FROM A PUNT, WITH A LARGE SHOULDER-GUN.

We quote the following from Colonel Hawker's directions for shooting wild-fowl from a punt, with a large shoulder-gun:—

" In following wild-fowl, it is easier to get within twenty yards of them by going to leeward, than a hundred and fifty if directly to windward, so very acute is their sense of smelling.

"The best time, therefore, to have sport with a canoe and a shoulder-gun, (provided it be low water or half ebb while you are hid in the creeks,) is in clear, frosty, moonlight nights, when the wind happens to blow towards you as you face the moon. It is then impossible for the wild-fowl to smell you, and you may, by getting them directly under the light, have the most accurate outline of every bird, and even distinctly see them walking about, at a much greater distance than a gun would do execution. From thus being on the shining mud-banks, they appear quite black, except some of the old cock widgeons, on the wings of which the white is often plainly to be seen.

"On arriving sufficiently near, should the water be so low that you cannot present your gun at the birds without kneeling or standing up, you must get aground at the side of the creek, or steady your canoe by means of forcing each oar from between the *thowls* into the mud, otherwise the recoil of the gun will set her rocking, and thus you might probably be tipped out. Having made all fast, rise up and fire. Take care, however, to rise high enough to be well clear of the mud, or not a feather will you touch, and present as follows;—by day or moonlight, if the birds are close, directly at them, or, if beyond forty yards, shoot at their heads,—unless they are feeding in a concave place, where the tide has left a kind of plash, in which case you must level rather under them, or you will only graze their back feathers. In star-light take your aim just at the top of the narrow black line in which birds always appear to one who is low down; and when so dark that you cannot see your gun, present, as you think, about a foot over, or you will most likely shoot above a foot under them.

"Should you have been successful, you will, if at night, generally hear your cripples (wounded fowl) beating on the mud before you can sufficiently recover your eyes, from being dazzled by the fire, to see them. Your man then puts on his mud-boards," (which are flat square pieces of wood fastened to the feet, to enable the party to walk or wade through mud,) "taking the setting pole to support him, and assist the dog in collecting the killed and wounded; taking care to secure first the outside birds, lest they should escape to a creek. During this time you are left in charge of the punt, and should, if possible, keep a look out, in order to see if any more birds fall dead or wounded from the company, before they have flown out of sight.

"The gunner generally calculates on bringing home the half only of what he shoots, from the difficulty of catching the whole of his winged birds, which he calls *cripples,* and those that (to use the pigeon phrase,) fall out of bounds, which he calls *droppers.* If the birds fly up he generally declines firing, knowing that the moment they are on the wing, they become so much more spread, that he could seldom get more than three or four, for which it would he hardly worth while to disturb the mud, particularly as widgeon, by night, if not fired at will, in cold weather, probably settle again at no great distance."*

Mr. Greener, to whose work we have already referred, says, "Never make duck guns, (shoulder-guns) above seven-eighths in the bore, if you wish them to kill at a great distance, and not less than fifteen or sixteen pounds weight and full four feet long."

WILD-FOWL SHOOTING FROM A PUNT, WITH A STANCHION-GUN.

The most destructive method of pursuing wild-fowl is that adopted by the coast-gunners resident in the vicinity of creeks and harbours, who kill the birds for sale. A gun of immense weight is fixed upon a rest or frame or carriage, either in a flat-bottomed canoe, or some other floating craft, calculated to make way either in shallow water, or ooze, or over sands. It may for once be fine amusement to an amateur-shot to row about in quest of hoopers, (wild swans,) geese, and widgeons, in a frosty moonlight night, with an experienced craftsman and Newfoundland dog, but a few blank nights in succession have a remarkably cooling effect. Much has been said of the luxury of a shower-bath, and of its salutiferous properties,—something has lately been written on the young deer-stalker's emotions when he first feels the mountain-burn enter at the breast of his shirt,—we, too, could be discursive on the amateur-gunner's sensations when his Newfoundland Neptune shakes the supercumbent salt fluid from his hide every time he returns to the boat. Wishing them success, we leave the coast-gunners to their trade; our notions of sport do not extend to rowing about, during a wintry night, in a wet boat, with a swearing seaman and a *damp* dog.

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* *Instructions to Young Sportsmen.* 8th edit. London, 1838.

CHAPTER VII.

JUVENILE SPORTS.

ROOK AND PIGEON SHOOTING, ETC.

Young rooks, in the month of May, are generally shot whilst sitting on the branches, near their nests, on the tops of the loftiest trees, so that it requires a steady aim, and hard-stricken shot to bring them down with certainty. Very large shot is best, for the momentum of it at once throws the rook off its balance. Rooks wounded with small shot will frequently cling to the bough with their claws, and die suspended in that manner. Rooks are gregarious, and feed on grain, worms, and insects. It is only during the season of incubation, and until the young ones can fly, that they frequent the rookery, which is mostly a small plantation, or clump of elm trees, and near to some habitation. When rooks choose any particular cluster of trees, or plantation to build in, the same trees will, if standing, be tenanted again the next year by the same rooks and their offspring, notwithstanding they may have been much fired at, or in some other way disturbed. This opinion is not universal. In some counties there exists a prejudice against the practice of firing at rooks with gunpowder, especially when the rooks are few, and the number of trees limited, lest the rooks should desert the rookery; and, therefore, that as little alarm as possible may be created, they are fired at with balls from the air-gun, and sometimes the young shooter will try his skill with the cross bow.

After young rooks have been fired at several times, some of the strongest and best-fledged will quit the rookery, and alight on hedges or trees at some distance, and during these short flights, they afford good sport to the tyro learning to shoot birds on the wing. A warm sunny day is best for rook-shooting. In cold weather, particularly on windy days, young rooks will not quit their nests.

The old rook is distinguished from the young of the first year by the base of either mandible being destitute of feathers, and the skin covered with a whitish scurf; the beak of the young rook is black to the insertion. They are distinguished from other birds of a somewhat similar appearance by a slight variation of colour; the rook has a blue, the carrion-crow a brown tinge, the jackdaw is partially grey, the raven is jet black.

The Wood-pigeon.—The wood-pigeon is little regarded by the sportsman. A shot may be obtained by lying in ambush early in the morning, near to some wheat stubble, or field of newly sown grain, where the birds feed; but the best sport the wood-pigeon affords is at the roosting place, where the shooter ought to take his station an hour before sunset. It is difficult to obtain a shot in any other manner, except when the birds are young, when they are sometimes killed in trees, in the same manner as young rooks. The sportsman in pursuit of game often sees them, but rarely obtains a shot at them. Sometimes, but it is usually when he is not aware of them, they will suffer him to approach close to the tree in which they are perched. The tree is generally a large one, and perhaps in full foliage, and he hears the rustling of the wings of the decamping birds, but seldom secures a shot. Whenever a wood-pigeon leaves a tree, the shooter should prepare for others, since, when there are several in the same tree, they will not leave it simultaneously, but move off in succession. They are large strong birds, and require heavy shot to bring them down.

Shooting tame pigeons is becoming a very common amusement; but it is oftener practised to decide a wager, than prove the skill of the parties. The Red House at Battersea, near London, is the scene of the principal matches. The birds are sprung from a trap, which is usually placed twenty-one yards from the gun; the birds of each person are provided by his opponent; blue rocks are the favourites; very heavy guns are used, but the weight of shot is usually limited. The birds must fall within a stated distance from the trap, or they are not counted amongst the successful shots.

The Lark, Field-fare, Lapwing, Golden-plover, and Dotterel.—Larks and field-fares are often the object of the young shooter's pursuit. Field-fares,—the blue-backs and red-wings,—arrive in October, and remain during winter. They are easily approached during a frost, or when the ground is covered with snow. They will then be found in search of the berries of the mountain-ash, the holly, and the hawthorn, and are killed in great numbers. Like wood-pigeons, field-fares do not leave a tree, or rise from the ground simultaneously, so that when one bird flies off, if the shooter will hasten to the spot, he will, in all probability, meet with a lagger.

The lapwing or pewit is a bird much sought for by the juvenile shooter. Lapwings are commonly found on marshes, or wet land abounding in rushes. Except during the season of incubation, they collect in flocks, and are so very wary as to be difficult of approach. They are often killed for the sake of their toppings, which are useful to the angler. As they wing round the shooter, it is extremely difficult to decide whether they are within range or not; they should be within a moderate distance when fired at, or they will escape in the interstices of the charge, as the size of the body bears a small proportion to the apparent size of the bird when on the wing,—it is not uncommon to see several feathers cut out of the wings, and the bird fly away as if unhurt.

All these birds afford amusement chiefly to schoolboys. The sportsman in pursuit of game does not think them worthy attention; but the golden or whistling-plover, and the dotterel, which are birds often met with in hilly districts, are generally considered as worth firing at, if they accidentally come in the way, but are not worth the trouble of following.

The Land-rail.—The land-rail or corn-crake is a bird of passage. It may be found with pointers or spaniels early in spring, in hedges or long grass. The dogs for this sport should not be stanch, such as will foot the birds are best, as it is with great difficulty they can be made to rise. It is only during the first fortnight after their arrival that they may be fairly killed in spring,—after that time they begin to pair. In August and September the sportsman sometimes casually meets with a land-rail while beating for other birds.

CHAPTER VIII.

THE DOG.

POINTERS AND SETTERS.

THE dog seems to be endued with some instincts for the exclusive service of man; whereas the instincts of all other animals are conducive to the supply of their individual wants, and their usefulness to man is secondary thereto. It would be difficult to controvert the argument, that the pointer's instinct was given for the purpose of aiding men to capture or kill game, by means of such engines as nets or guns. This, we are aware, may be a doubtful position to maintain; but who can say for what other apparent purpose this peculiar faculty was given? It may, indeed, be urged, that the propensity to point, in the pointer, is a means ordained by Providence for his subsistence in a wild state, by enabling him to approach within reach of his prey, and thus to accomplish, by another species of stealth, what the tiger and other animals of the cat tribe effect by ambuscade. Such an argument, however, is presumptively rebutted by the fact, that all existing races of wild dogs are gregarious, and resort to the chase for food; nor is there any record of the existence of dogs in a state of nature, except those calculated for the chase. It is therefore gratuitous to assert, that the instinct or faculty of pointing was bestowed upon the pointer as a means of subsistence, since he has ever been dependant on man for food.

It is strongly argued, that all dogs have descended from one common stock, and that by difference in food, climate, and training, they have become what they are at present; nor is it more improbable that such is the fact, than that the human race are descended from one common parent; for dogs are not more dissimilar than the various tribes of men, who differ not only in outward form, but morally and intellectually, as much as dogs vary in size, shape, temper, and sagacity. Those animals which can be domesticated improve by acquaintance with man, as the wild fruits by cultivation. All wild dogs have some qualities in common; but their instincts are somewhat limited or not called forth. It is only in its domesticated state that we find the various qualities which render the dog so useful a servant to man. Wild dogs are, in comparison with domesticated dogs, what savages are to civilized society; for wherever savages are found, they bear some resemblance to each other, and are engaged in similar pursuits.

England is not less famous for its horses than for its sporting dogs. Our greyhounds, foxhounds, and harriers are unequalled, and that they are so results from the care that has been taken to keep each breed distinct. All our pointers are, in some degree, of Spanish extraction; and such of them as have most Spanish blood in their veins are unquestionably the best. The Spanish pointer is about twenty-one inches in height. He has a large head, is heavily made, broad-chested, stout-limbed, with a large dewlap; his eyes are full, and widely apart, and his nose is broad; his tail is straight, short, and thick, and his ears large, pendulous, and fine; he should have a round-balled, and not a flat foot.* Notwithstanding, however, the vaunted excellence of British pointers, the generality of them are not such as they ought to be. It is much to be lamented that the same care is not taken in the breeding of pointers and setters as of hounds. Scarcely two pointers are to be seen so much alike, that a naturalist would pronounce them to belong to the same class of dogs, inasmuch as they are dissimilar in size, weight, and appearance. We recognise only two pointers,—the Spaniard and the mongrel. Nearly all the pointers we see are, in fact, mongrels, although each may have more or less of the original Spanish blood. Such, however, is the force of nature, that a dog having in him very little of the blood of the pointer may prove a very serviceable dog to the shooter. We frequently meet with very good dogs—dogs deemed by their owners first-rate—which bear little resemblance, in point of shape and appearance, to the true pointer; some of these have the sharp nose of the fox, others the snubbed nose of the bull-dog; in short, there is every possible diversity in size and appearance, from the greyhound to the pug. The excellence of such dogs must be attributed to judicious treatment, severe discipline, or from having been constantly out with a good shot, or in company with highly-trained dogs. It is, however, a mistake to suppose that they are of a proper strain to breed from. Their offspring will be deformed, and will probably manifest some of the worst and more hidden qualities of the parents.

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* "The most essential point about the dog," says General Hanger, "is a good foot; for, without a good firm foot, he can never hunt long. I never look at a dog which has a thin, flat, wide, and spread foot." He relates the advice given him by a gamekeeper in Suffolk for keeping the dog's foot in working condition. "As long as the ground is dry and hard, I always wash my dog's feet with warm soap and water, and clean them well, particularly between the toes and balls of the feet; this comforts his feet, allays the heat, and promotes the circulation in the feet. In the more advanced period of the season, when the ground is very wet, then salt and water may be proper."

The attempt to lay down a written rule whereby to distinguish between a good and an indifferent pointer would be futile. How much of the blood of the pointer a dog has in him will be read in his countenance, rather than inferred from his general shape and appearance. There is an indescribable something in the countenance of a thorough-bred or nearly thorough-bred pointer, which a little habit of observation will enable the sportsman to detect with tolerable accuracy, so that he may judge of the capabilities of a dog as a physiognomist will read at a glance a person's disposition and ability, in his countenance.

The instinct of pointing, we apprehend, is an indestructible principle in the blood of the pointer, which, however that blood may be mingled with inferior blood, will always, in some degree, manifest itself; and on this ground we build our theory, that the further any dog is removed from the original Spanish pointer, the worse the dog is; and, consequently, that all attempts to cross the pointer with any other blood must necessarily deteriorate the breed. The greyhound is seldom or never crossed to give him additional fleetness, nor the hound to improve his nose; why then should the pointer be crossed with dogs which, in so far as the sports of the field are concerned, scarcely inherit one quality in common with him? Attempts, however, are constantly made to improve the pointer by a cross with the blood-hound, fox-hound, Newfoundland dog, or mastiff, sometimes with a view of improving his appearance, and bringing him to some fancied standard of perfection; but in reality inducing a deformity. One of these imaginary standards of perfection is, that to one part thorough Spanish blood, the pointer should have in him an eighth of the fox-hound, and a sixteenth of the blood-hound. A cross will sometimes produce dogs which are, in some eyes, the *beau-idéal* of beauty; but however handsome such dogs may be, they will necessarily possess some quality not belonging to the pointer; for instance, a cross with the hound gives the propensity to trace hares, if not to give tongue. A thorough-bred pointer carries his head well up when ranging; he will not give tongue, nor has he much desire to chase footed game. The hound pointer may be sometimes detected by his coarse ears, by his tail being curled upwards, and being carried high, or by his rough coat. An occasional cross with the mastiff or Newfoundland dog is said to increase the fineness of nose, but it is converting the pointer into a mere retriever. Another, and the main source of the unsightliness of sporting dogs, is the allowing an indiscriminate intercourse between pointers and setters. Good dogs may be thus obtained sometimes, but they are invariably mis-shapen: they have generally the head and brush tail of the setter, with the body of the pointer, and their coats are not sleek, and instead of standing at their point, they will crouch. When the sire is nearly thorough-bred, dogs of a superior description, but certainly not the best, are sometimes produced by the Newfoundland or some other bitch not strictly a pointer. We are not willing to allow that the pointer is improved in any quality that renders him valuable to the sportsman, by a cross with the hound or any other sort of dog; though we cannot deny that the setter is materially improved in appearance by a cross with the Newfoundland, but what it gains in appearance, it loses in other respects.

Breeding mongrels, especially crossing with hounds, has given the game-keepers and dog-breakers an infinity of trouble which might have been avoided by keeping the blood pure. The best pointer is the offspring of a pointer bitch by a pointer dog; such an one is nearly broken by nature. The Spanish pointer seldom requires the whip; the hound pointer has never enough of it. One of the main sources of the sportsman's pleasure is to see the dogs point well.

Dogs should be constantly shot over during the season by a successful shot, and exercised during the shooting recess by some person who understands well the management of them, otherwise they will fall off in value,—the half-bred ones will become unmanageable, and even the thorough-bred ones will acquire disorderly habits.

We look upon the setter to be an inferior kind of pointer, perhaps originally a cross between the pointer and the spaniel, or some such dog as the Newfoundland, for it has some qualities in common with each. The pointer has the finer nose, and is more stanch than the setter; his action is much finer. Pointers are averse to water; setters delight in it. The setter will face briars and gorse bushes better than the pointer, which is in this respect a tender dog; and for this reason the setter is preferred to the pointer for cover shooting. Besides, his being not so stanch as the pointer is an additional advantage in heavy covers. The sportsman who shoots over well-broken pointers, frequently passes game in woods, while the pointers, which are not seen by him, are at their point; the setter, being more impatient to run in, affords the shooter many shots in cover, which the over-stanch pointer would not. The pointer is always to be preferred on open grounds. In hot weather the pointer will endure more fatigue than the setter.

DOG-BREAKING.

To ensure good sport, the shooter must be provided with good dogs. However *abundant* game may be, there can be no real sport *without* good dogs; and however *scarce* game may be, a good day's sport is attainable *with* good dogs, by a person who feels what sport is, and who does not look upon filling the game-bag and loading the keepers with game, as the sole end and aim of the sportsman's occupation. The mere act of killing game no more constitutes sport, than the jingling of rhyme constitutes poetry. Since, then, good dogs contribute to good sport, the shooter should be careful to whom he entrusts the breaking of them. Bad habits, by dogs as well as by bipeds, are sooner acquired than got rid of. If it suit his convenience, the shooter should frequently accompany the breakers when practising his dogs; he should direct them to make use of few words, and those words should be the same that *he* is in the habit of using. A multiplicity of directions only serves to puzzle a dog, as a person's speaking Irish, Scotch, and Welsh alternately would perplex a Spaniard.

In common with other sports, shooting has a vocabulary of its own. We subjoin a list of some of the words made use of by breakers and sportsmen to dogs, many of them being any thing but euphonious to the unaccustomed ear. *To-ho* spoken in an under tone, when the dog is ranging, is a warning to him that he is close upon game, and is a direction to him to stand. There is no necessity for using it to a dog that knows his business. Spoken in a peremptory manner, it is used to make the dog crouch when he has run up game, or been otherwise in fault. *Down-charge*, or *down-to-charge*, is to make the dog crouch while the shooter charges. *Take-heed*, and *be-careful*, are used when the dog ranges over ground where it is customary to find birds. *Take-heed*, is a word of correction; *be-careful*, of encouragement. The former is used by way of caution or notice to prevent the dog putting up birds by running over the ground too fast; the latter is likewise a caution, but used when the dog beats slowly or carelessly. *Back*, is used to make a dog follow at heel. *'Ware-fence*, is used to prevent dogs passing a fence before the gun. The dog should never, on any account, leave an enclosure until its master has left it. *'Ware*, or *beware*, is used to rate a dog for giving chase to a hare, birds, or cattle, or for pointing larks, or approaching too near the heels of a horse. *Seek*, is a direction to the dog to look for a dead or wounded bird, hare, or rabbit. *Dead*, is to make a dog relinquish his hold of dead or wounded game. The dog should not touch a dead bird, but should retain possession of wounded game until it is taken from him; for should he suffer a bird that is only slightly wounded to disengage itself from his grasp, another *seek* becomes necessary, and the bird is either lost, or despoiled of its plumage by the catching and re-catching.

The dog should fall when the gun is fired, and remain down until he is told to seek, when he should point the dead bird. A pointer that drops to shot becomes an excellent retriever.

The dog should be taught to obey the eye and the hand, rather than the voice. A dog that will do so is invaluable, in open grounds, when birds are wild.

Whenever speaking to a dog, whether encouragingly or reprovingly, the sportsman should endeavour to *look* what he means, and the dog will understand him. The dog will understand the look, if he does not the words. The sportsman should never, with a smile on his countenance, punish a dog; nor commend him when he has done well, but with an apparent hearty good will; the dog will then take an interest in obeying him. Game-keepers and dog-breakers are often odd fellows, and seldom natives of the place where they follow their avocation. Many of them are particularly loquacious to the dogs. Should one of these queer specimens jabber in a Cornish or Yorkshire dialect to a dog trained on the Grampians, the dog will understand from his look whether he is pleased or offended, but nothing more. The dog has not the gift of tongues, but he is a Lavater in physiognomy!

A dog-breaker who has not a good temper, or what is tantamount thereto, a plentiful store of patience, should never be employed, or he will ruin any really valuable dog entrusted to his care. Dog-breakers are an impatient race of people, and it is but natural that they should be so, since nothing tries the temper more than the management of a number of young dogs of different dispositions, except shooting over bad ones.

A young dog that carries his head well up when beating, should be chosen in preference to one that hunts with his nose on the ground. A dog should not feather, but draw upon his game.* The handsomest dog is that which shows the most breed; the most valuable, that which affords the sportsman the greatest number of shots.

It is more desirable to break young dogs in company with a pointer than with a setter. The former makes a more decided point than the latter.

The dog should be taught to quarter his ground well. He should cross over before the shooter continually, at not more than twenty paces distance in advance, ranging about thirty paces on either hand, and leaving no part of his ground unbeaten. If in company with other dogs, he should not follow them, but each dog should beat independently.

The dog may be taught to back or back-set, by the breaker holding up his hand and crying *to-ho!* when another dog makes a point. A well-bred dog will almost invariably back-set instinctively. To back-set instinctively is the distinctive characteristic of a promising young dog; indeed, it is the only safe standard by which the shooter may venture to prognosticate future excellence. A dog's pointing game and larks the first time he is taken out, is no certain criterion of merit; but there is no deception in a dog's backing instinctively the first time he sees another dog make a point. It is a proof that he is a scion from the right stock.

The shooter should kill nothing but game over a young dog, or the dog will never learn his business.

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* It is not only the best dog that carries his head up, but game will suffer him to approach nearer than one that *tracks* them.

He should of all things avoid shooting larks and field-fares. When the shooter is in the habit of killing small birds, such as larks sometimes, and at other times is in the habit of correcting him for pointing them, the dog becomes confused, and is puzzled when he comes upon a snipe, whether to point or not. Where game is scarce, the best dogs will occasionally point larks; and it requires much time to teach a young dog that they are not game, and to break him off pointing them when once he has acquired the habit.

When punishing a dog, it is better to beat him with a slender switch than with a dog-whip. But whether a switch or dog-whip be used, the dog should be struck across, not along, the ribs; or, in other words, the switch or lash should not be made to lap round his body, but the blow should fall on the whole length of his side. A dog should never be kicked, or shaken by the ears. When the shooter is unprovided with a switch or dog-whip, he should make the dog lie at his foot several minutes, which the dog, eager for sport, will consider a severe punishment, and it is a sort of punishment not soon forgotten.

The routine of dog-breaking is well explained in the note at the foot of this page. We very much approve of the system there laid down.*

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* "The first lesson, and the one on which the breaker's success chiefly depends, is that of teaching the dog to drop at the word '*down*;' this must be done before he is taken into the field. Tie a strong cord to his neck, about eighteen yards long, and peg one end into the ground. Then make the dog crouch down, with his nose between his front feet, calling out in a loud voice '*down*.' As often as he attempts to rise, pull him to the ground, and repeat the word

THE SPANIEL, COCK DOG, OR SPRINGER.

Spaniels are the best dogs for beating covers, provided they can be kept near the gun. They are generally expected to give tongue when game is flushed: some spaniels will give notice of game before it rises, which is very well where woodcocks only are

'*down*' each time. When he lies perfectly quiet while you are standing by him, walk away, and if he attempt to follow you, walk back, and make him '*down*' again, giving him a cut or two with the whip. This lesson must be repeated very often, and will take some trouble before it is properly inculcated. When once learned it is never forgotten, and if properly taught in the beginning, will save an infinity of trouble in the end. He ought never to be suffered to rise, until touched by the hand. This lesson should be practised before his meals, and he will perform it much better as he expects his food, and never feed him till you are perfectly satisfied with his performance. After you have been flogging him, always part friends, and never let him escape while you are chastising him, at least, if he does, do not pursue him, as if he sees (which he soon will) that he is the quicker runner of the two, all discipline will be at an end.

"When he has become tolerably steady, and learned to come in to the call, and to drop to the hand, he must be taught to range and quarter his ground; a thing which is seldom seen in perfection. On some good brisk morning choose a nice piece of ground, where you are likely to find. Take care to give him the wind, *i. e.* to let him have the wind blowing in his face, wave your hand with 'hey on good dog,' and let him run off to the right hand to the distance of about eighty yards." (We suggest thirty.) "Call him in, and, by another wave of the hand, let him go off to the same distance to the left. Walk straightforward with your eye always on him. Go on and let him keep crossing you from right to left, and *vice versâ*, calling him in when at the limit of his range. This is a difficult lesson, and requires great nicety in teaching. Never let him hunt the same ground twice over. Always have your eye on him, and watch every motion."—*New Sporting Magazine*, vol. v. No. 28, p. 256.

expected to be found. Woodcock and pheasant shooting are often combined; when that is the case, a noisy cry is not desirable: pheasant shooting cannot be conducted too quietly where covers are limited. Wherever the underwood is so thick that the shooter cannot keep his eye on the dogs, spaniels are to be preferred to pointers or setters, whatever species of game he may be in pursuit of. When spaniels are brought to such a state of discipline as to be serviceable in an open country, they will require no further tutoring to fit them for the woods, unless it be that the eye of their master not being always on them, they begin to ramble. The efficiency of the training of spaniels for cover shooting depends, for the most part, on their keeping near the shooter; for if they riot, they are the worst dogs he can hunt.*

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* "There is much less trouble in making a spaniel steady than at first thought may be imagined. A puppy eight months old, introduced amongst three or four well-broken dogs, is easily taught his business. The breaker should use him to a cord of twenty yards length or so, before he goes into the field, and then take him out with the pack. Many a young dog is quiet and obedient from the first; another is shy, and stares and runs about as much at the rising of the birds as the report of the gun. Shortly he gets over this, and takes a part in the sport—he then begins to chase, but finding he is not followed after little birds or game, he returns; and should he not, and commence hunting out of shot, which is very likely, he must be called in, and flogged or rated, as his temper calls for. With care and patience, he will soon 'pack up' with the others, especially if that term is used when the dogs are dividing; and if not, he may be checked by treading on the cord, and rated or beaten as his fault requires. Spaniels will, in general, stand more whipping than other dogs, but care must be taken not to be too lavish nor severe with it at first, or the dog becomes cowed, and instead of hunting will sneak along at heel,

THE RETRIEVER.

The business of the retriever is to find lost game. Newfoundland dogs are the best for the purpose. They should have a remarkably fine sense of smelling, or they will be of little use in tracing a wounded pheasant, or other game, through a thick cover, where many birds have been running about. A good retriever will follow the bird on whose track he is first put, as a blood-hound will that of a human being or deer. He should be taught to bring his game, or in many instances his finding a wounded bird would be of no advantage to the shooter.

KENNEL TREATMENT.

The best regular food for sporting dogs is oatmeal well boiled, and flesh, which may be either boiled with the meal or given raw. In hot weather, dogs should not have either oatmeal or flesh in a raw state, as they are heating. Potatoes boiled are good summer food, and an excellent occasional variety in winter, but they should be cleaned before being boiled, and *well dried* after, or they will produce disease. Roasted potatoes are equally good, if not better. The best food to bring dogs into condition, and to preserve their wind in hot weather, is sago boiled to a jelly, half a pound of which, mixed with a little meal,

" Having learned him to hunt in his place, or rather at a proper *distance*—for with spaniels *distance is to be inculcated first and principally*—the next things to be attempted in turn, are to learn him 'down charge'—to prevent his chasing hares—to come in when needed—*to hunt the contrary side of a hedge ;* and then his education for shooting in the *open* is about complete—time will do the rest."—*New Sporting Magazine*, vol. v. No. 29, p. 337.

may be given to each dog daily, in addition to potatoes or other light food; a little flesh meat or a few bones being allowed every alternate day. Dogs should have whey or butter-milk two or three times a week during summer, when it can be procured, or in lieu thereof, should have a table-spoonful of flour of sulphur once a fortnight. To bring a dog into condition for the season, we would give him a very large table-spoonful of sulphur about a fortnight before the 12th of August, and two days after giving him that, a full table-spoonful of syrup of buckthorn should be administered, and afterwards twice repeated at intervals of three days, the dog being fed on the sago diet the while. There should always be fresh water within reach. Dogs should never be chained up.

A fortnight's attention to diet, bedding, and exercise, will bring a dog into condition, however lean or cumbrous he may be, if not diseased. Dogs should be allowed plenty of exercise. They cannot be too often taken out, either with or without a gun, by a person who understands their management, and is disposed to attend to them. Their kennels should be warm and *dry*, and, if not under cover, should be placed in sheltered situations. The straw should be often changed, as cleanliness is indispensable to health. They should be kept free from ticks: when a dog is tormented with these troublesome creatures, he should be well rubbed with a mixture of train oil and spirit of turpentine, which may be washed off the next day with soft soap. The health of a dog is indicated by his sleek appearance, by the looseness and softness of his pursy and glossy skin.

CHAPTER IX.

THE FOWLING-PIECE.

CHOICE OF A GUN.

BEFORE making choice of a gun, the sportsman should determine what weight he can conveniently carry. The heaviest gun, as regards shooting, will be most effective; but he should recollect, that unless he be a very robust person, a light gun will, on the whole, bring him more game, as a few additional pounds in the weight makes a deal of difference in the distance the person travelling can carry it with ease, and few persons can shoot well when fatigued.

The most approved guns under the system which prescribes a heavy charge of powder and a light one of shot, are double-barrels, bearing the following relative proportions of length to calibre;*—fourteen gauge, thirty-four inches long; seventeen gauge, thirty-two inches long; twenty gauge, thirty inches long. For the shooter who never uses shot larger than No. 6 or 7, these are proper proportions; and did the guns weigh nine or ten pounds each, they would shoot No. 6 or 7 shot well. But when under seven pounds and a half, they do not throw small shot as effectively as they can be made to throw large shot.

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* The size of the bore, gauge, or calibre of a gun—by which is meant the diameter of the barrel—is distinguished by the number of leaden balls fitting it which make a pound;—thus, eighteen leaden bullets, each fitting an 18 gauge barrel, make a pound; sixteen fitting a 16 gauge, or fourteen fitting a 14 gauge barrel, are also equal to a pound. The different gauges are also known by the number of thirty-seconds of an inch the diameter consists of;—thus, the diameter of an 18 gauge barrel is 20½-32's of an inch; a 16 gauge 21½-32's; and a 14 gauge 22-32's.

Barrels twenty-eight or thirty inches long, and fourteen, sixteen, or eighteen gauge, are of convenient size for a gun not exceeding seven pounds and a half.* Those of eighteen gauge shoot shot as strong as those of fourteen; but the latter throw a cartridge more satisfactorily. Sixteen is a desirable medium. These barrels are as efficient as long ones for short distances, viz. under thirty yards; and nine-tenths of game brought to the bag is killed within that distance. And for making long shots, the wire-cartridge has obviated the necessity of using long guns.

But if the sportsman find no inconvenience from carrying a nine pound gun, by all means let him adopt it. He may then shoot small shot well. The weight of the barrel is the *fulcrum*—the powder of which, of course, he can use an extra quantity, is the *lever*—these, combined as they are in a heavy gun, give the same *impetus* to a small pellet as a light gun does to a large pellet. The advantage of a heavy gun is that, without increasing the weight of the charge of shot, but merely by using a smaller size, a much greater number of projectiles are thrown at each discharge than from a light gun,—" there's multiplication going on,"*—the shots cover the target with indentions close and clustering as the stars in the milky way. With a gun nine pounds weight, the shooter will kill birds best with No. 7 shot, provided he pick his shots within forty yards, and stay at home on windy days. Thus we find that the use of a moderate quantity of very small shot renders a heavy gun a more efficient weapon than a light one, let the light one be charged in any manner howsoever. But as a heavy gun will admit of an increased weight of projectile, and if of sufficient bore and length will distribute large shot regularly on the target, we should prefer, except for partridge shooting in September, or for snipe shooting, Nos, 3, 4, or 5, with a cartridge of corresponding size in the second barrel.

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* Against this it may be urged that the longer the barrel is, the more accurately may the aim be taken. The reason for our preference is that the shooter does not so soon tire with a light gun, and consequently he can perform a better day's work; and not being fatigued, he will be in better nerve for shooting at the close of the day than after toiling with a long top-heavy gun. But after all, the question rests on the strength of the individual.

In short, except for snipe shooting, we would not recommend smaller shot than No. 5 for a light gun, because sufficient power cannot be generated to throw it effectively; nor for a heavy gun, because the heavy gun of sufficient length and bore will kill better at forty or fifty yards with large shot than with small.

Small shot has no advantage over large at any distance under thirty yards; because either is thrown so close, that a bird cannot escape if the aim be true, —the large shot is more effective for shooting footed game at that distance. If small shot has any advantage over large, it is at birds between thirty and forty yards distant, as there are more void spaces in the charge of large shot wherein a bird would escape; but against this it may be said, that at that distance the small shot is not driven with sufficient force. Beyond forty yards large shot has unquestionably the advantage.

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* Grose's Olio.

All guns of the same weight require nearly the same weight and proportions of powder and shot. Unless they are bored with an unusual degree of relief or friction, a difference in size of the bore, or in the length of the barrel, renders less variation in charging necessary than is generally supposed.

The different proportions of powder and shot must be regulated chiefly by the weight of the gun, and the size of the shot used. The following may be about the proper proportions for the generality of guns not exceeding seven pounds and a half—and they may be increased nearly one-third, for guns weighing between nine and ten pounds. *

Size of Shot. No.	Weight of Shot. Oz.	Weight of powder. Drams.
2	1⅞	1⅝
3	1¾	1⅞
4	1½	2
5	1⅜	2¼
6	1¼	2⅜
7	1⅛	2⅝†

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* If the gun shoots too close, and does not recoil, the quantity of powder may be increased.

If it shoots too close and recoils, the quantity of shot must be reduced.

If it spreads shot too much and does not recoil, the quantity of shot may be increased.

If it spreads shot too much and recoils, the powder must be reduced.

† Of the above, the gun recoils least with the No. 2, and most with the No. 7 charge.

These proportions cannot be materially deviated from without destroying the effect. If the powder is decreased, the discharge is weakened; if the powder is increased, the shot spreads; if the weight of the charge of shot is decreased, there will not be a sufficient number of pellets for effective shooting; if the weight of the charge of shot is increased, the discharge is weakened.

The usual objection to large shot is, that after it has travelled thirty yards it becomes dispersed; but let the powder be sufficiently reduced, and that objection fails.

It is not so much the velocity as the momentum of a shot that renders it effective. The momentum of a shot increases in a direct ratio with its weight. Large shot droops more than small, but it does not follow that its momentum is less.

The structure of a bird or quadruped not protected by feathers or fur—and we contend that game is very slightly so protected as against shot—may be compared with that of a ship. A large ball, moving with only half the velocity of a small one, will produce more than double the effect; the larger, but slowly-flying ball, will split a much thicker mast or beam, and do more damage to the framework of a ship than the small one. Upon the same principle, we think large shot is more effective for shooting the stronger species of game, though thrown with a very small charge of powder.

Another advantage arising from the use of large shot should not be overlooked. In order to kill in good style at thirty-five yards or upwards, with small shot, the aim must be such that the bird fired at be near the centre of the charge as thrown; for if the bird be near the outer circle of the charge, it is ten to one that it is only slightly wounded; but if near the outer circle of a charge of large shot, it is ten to one that it is brought down, for it must not be lost sight of, that when large shot is used, a single pellet will mostly be sufficient to bring a bird down. There is a stunning effect produced by large shot, which throws the bird off its balance at once. Small shot has not the same *immediate* effect. Hares, rabbits, grouse, pheasants, and full-grown partridges, will carry it off, though they fall within a hundred yards. It is very seldom, indeed, that a bird towers after being fired at with large shot.

The term friction implies a gradual contraction of the barrel towards the muzzle, which retards the progress of the shot, that more time may be allowed to the powder to burn. Relief accelerates the progress of shot through the barrels. What is the proper degree of relief or friction for different descriptions of barrels is a subject fruitful of controversy; as is also the form of the breech. The best breech is that which will cause the greatest quantity of powder to consume in the barrel, and give the least recoil. The percussion system of firing has simplified the boring of guns. We think that short barrels intended to be fired by percussion, should be bored perfect cylinders, and the breech should be conical or nearly so, and capable of holding a little more than half a charge of powder. Long barrels should be bored true cylinders throughout the greater part of their length, a little relief being allowed near the muzzle.

A barrel, which recoils from being light, or from not being held firmly when fired, throws shot very weakly. So, on the other hand, barrels which have sufficient weight to break the recoil, or which are placed against something solid when fired, have their shooting power amazingly increased. The reason is, that when the gun is allowed to recoil, a portion of that power which should be employed in expelling the shot is uselessly expended on an yielding surface in a contrary direction; whereas, when the barrel is firmly fixed, or is of sufficient weight to break the recoil, that portion of the explosive force which strikes against the breech rebounds and is forced back upon the shot, and consequently becomes a portion of the available strength of the charge. This explains why the weight of the gun rather than a difference in length or bore regulates the shooting power. In what follows, Mr. Greener,* whose book contains a lucid exposition of the nature of projectile force, shows this more clearly :—

"The fact that the shooting powers of a gun are increased by its being fixed in an immoveable frame, is proved with the practice of mortars. Mortars on iron beds, and these firmly embedded in the earth, will throw a shell farther when on the ground than when placed on a platform, or on board a ship. It is for the purpose of destroying the recoil, that mortars for sea service, though of the same calibre as those intended for land service, are made three times the weight. Dr. Hutton states, that he found no advantage by retarding the recoil in practice with artillery. He means, that no advantage is gained by stopping at three feet a gun accustomed to recoil to the distance of six. The statement is perfectly true. If he were to allow a gun to recoil only an inch, and then strike against a solid substance, he would gain nothing. For if it recoil ever so little, the shooting force is as much weakened as if it recoiled twice as far.

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* *The Gun*, by William Greener. London, 1835.

"To increase that force, a steady fixed resistance is required. The velocity of the projectile depends on the force of the immediate impulse. Before a gun, suffered to recoil, could rebound from striking some solid substance in its recoil, the charge would be gone, and could, therefore, receive no additional impetus from that rebound. The truth of this fact may be illustrated by throwing a hand-ball against any loose body with sufficient force to displace it. However hard or elastic that body might be, the ball would not rebound from it, but would fall perpendicularly down. Fix and secure that same body, and then the ball will rebound with little less force than that with which it was thrown against it. So it is with gunpowder. If it meet with a firm resistance, it will rebound and project the ball or shot with additional force."

THE LOCK.

The flint-and-steel lock, like the matchlock, has had its day; and the one is as likely as the other to supersede the detonator. There were some sportsmen who long retained the flint in preference to the copper-cap. Their partiality for the old system arose from their inability to depart from the manner of taking aim to which they had been accustomed—

they fired too forward! It was said, too, that a barrel fired by a detonating lock, did not throw shot so efficiently as the other. That objection is now obviated by making barrels perfectly cylindrical throughout nearly the whole length of the tube. We prefer the copper-cap lock for its simplicity, to any other system of firing by percussion.

A bad lock, in these *march of improvement* days, is rarely fixed to a gun. Since the use of detonators has become general, the quality of the lock is not of so much consequence to the sportsman as it was previously. The quickness of firing with the old flint and steel locks depended so much on the workmanship of the lock, that a properly-tempered and well-filed one was invaluable. The introduction of detonators has by no means improved the quality of the workmanship of the lock—it has rather deteriorated it. The fact is, the master gunmakers, finding the lock not so much looked at as formerly, are become indifferent to obtaining the assistance, or unwilling to incur the expense of first-rate workmen. The hardening and filing of a lock in an artist-like manner, requires no common skill. The best locks ever turned out were those made on the flint and steel principle, at the time when detonators first came into vogue; the smartness with which the percussion locks fired, obliged the makers of the flint and steel locks to bestow double diligence and labour on their work, conscious that a rival was in the field with whom it required no ordinary pains to compete. Flint-locks, whether as applied to the fowling-piece or the musket, will soon be forgotten, or remembered only to give a romantic interest to some tale of other times, as the arbalest and long bow serve only to remind us of our Norman and Saxon ancestors! It requires some mechanical knowledge, and some experience, to decide on the merit of a lock. The vulgar method of trying one is this:—The operator draws back the hammer with his thumb, not touching the trigger with his finger, and if the works in the interior catch and snap smartly at the half-way, and when the hammer is drawn back, he may rely on the main-spring being sufficiently strong and free to fire the caps; then, with his thumb still on the hammer, he draws the trigger and lets the hammer glide slowly down upon the pivot. With a little practice he will be able, in some degree, to discriminate between a good lock and a bad one. To prove the difference in quality, he should take up a well-finished lock,—that is, one of hard material, well filed, and having springs of a suitable and corresponding strength,—and compare it with an inferior lock; by a nice touch he will perceive the difference,—the hammer of the former slides backwards and forwards with a smooth even force, whilst that of the latter runs rough and gritty, as if clogged with sand. If this somewhat uncertain mode of trial serve no other purpose, it will enable the shooter, when he takes up a gun that has been used since being cleaned, to discover whether the lock is sufficiently free from rust and dirt as to be fit for the day's service; for most assuredly, if the lock be clogged, when thus worked backwards and forwards, it will not snap, or in sporting phrase *talk;* and in that case it would be unsafe to use it. A detonating lock that will bear this trial, and will invariably fire the cap, may be pronounced quite good enough for any sporting purpose.

The triggers should be what are technically termed *box-triggers*, and should be taken from the stock and cleaned at least once during the season, and oftener if very much exposed to dust, rain, or a damp atmosphere. They should be adjusted with scrupulous nicety, so as to require only a slight touch to draw them; they should not, indeed, fire as easily as the hair-triggers of duelling pistols, but should be fixed so firmly as that the sportsman should not be liable to discharge his piece while bringing it up to his shoulder cocked, with his finger upon one of the triggers. The triggers may sometimes be regulated by filing, hardening, or softening the scear spring, or filing the wedge-like part of the scear which falls into the notches of the tumbler; and sometimes it is necessary to file that part of the trigger which comes in contact with the scear, but this operation requires to be carefully performed. A valuable lock should not be placed in the hands of an unskilful workman for the apparently trifling purpose of regulating the triggers, nor yet for any other purpose.

WADDING.

The wadding we should recommend is that made of felt, and anointed with some chemical preparation. We are not sure that this is the very best description of wadding, but we know of none better. New waddings are constantly invented. The metallic wadding, concave wadding, punched cards, or punched hat wadding, are any of them good, as regards shooting. The chief reason why we bestow a preference on the anointed wadding is, because the barrel is kept less foul, and may be fired so many times oftener without requiring cleaning, than when any other description of wadding with which we are acquainted is used. We are not partial to a tight wadding, but it should fit so that when the barrel is clean and smooth within, the charge will not stir. There is little fear of the charge stirring after a barrel has been fired a few times, as the place where the leading or foulness accumulates in greatest quantity is just above where the charge of shot lies.

THE COPPER-CAP.

Considerable improvement has been made in copper-caps since they were first introduced. The composition in all of them is now good, that which possesses the anti-corrosive principle is perhaps best. There is much difference in the copper of which they are made, but that is of little consequence when good locks with concave or well shielded hammers are used, otherwise those made of bad copper are said to be dangerous. We never heard of an accident from them. The shooter should be particular in procuring copper-caps of a proper size; for if they do not fit the pivots, considerable inconvenience will be experienced. When too small, they will not explode; and when too large, the cap on the second pivot is apt to fly off when the first barrel is fired. The shooter will find it convenient to carry a quantity of caps loose in his waistcoat pocket, with a reserve in a box, (a metal box water-tight is best,) to have recourse to should those in his pocket become wet. He should take care that there be nothing in his pocket to choke the caps; and by way of precaution, he should, before putting a cap on the pivot, see that there be no dirt in the cap, and that it be perfect.

GUNPOWDER.

The best powder does not soil the gun so much as inferior powder. After using good powder, a redness will be observed round the orifice of the pivot. After using coarse powder, a white or black appearance will present itself. The purer the powder is, the oftener may a barrel be fired without requiring to be cleaned.

The manufacturing of gunpowder has arrived at such perfection, that it is very seldom the sportsman has reason to complain of any imperfection therein. The sporting gunpowder sold in *canisters* is to be preferred to the *treble-sealed*, which is wrapt in cartridge-paper. The reason for such preference is, the greater chance of the canister-powder being dry, and uninjured by damp. There are several rival mills at which the *real treble-strong* is made; but as far as our observation has extended, it would be partiality in us to recommend any one manufacture as the best, or to decry any one as the worst. We have been so fortunate, during the last few years, as to meet with none of an inferior quality, except such as we had reason to believe had been spoiled by being kept in an improper manner: from all which we infer that no bad sporting gunpowder is manufactured, but that a great deal of good is spoiled by exposure to a damp atmosphere. Nearly all the canister-powder made, is, we believe, of nearly the same quality in every respect when first manufactured. But when procured by the shooter from the retailers, there will often be found some variation in the strength and quickness of firing.

Large-grained powder is generally stronger than small-grained. It is well to be cautious that the grain is not so large as not to fill the nipple freely, or mis-fires will be the consequence. Powder which suits one gun may not suit another; the larger the bore of the gun, the larger should be the grain of the powder. An instrument for trying the strength of powder should not be trusted to: the best trial is with the gun in which the powder is intended to be used, and there can be no better target for trying the comparative strength of different powders, than an unbound book fixed firmly against something solid.

SHOT.

The heavier and harder the metal of which shot is made the better. As shot is numbered differently by different manufacturers, we give the number to the ounce of the sizes to which we have referred:—

A. A.	about	40	4.	about	180
A.	—	50	5.	—	220
B. B.	—	60	6.	—	270
B.	—	75	7.	—	350
1.	—	80	8.	—	600
2.	—	110	9.	—	1000
3.	—	130	10.	—	1700

CARE OF THE GUN.

The fowling-piece should be put by clean, oiled, and the barrels corked or stopped, and with the hammers upon the pivots. It should be kept in a cloth or wooden case, in a dry room, and, when not in constant use, occasionally rubbed with linen dipped in olive oil. The inside of the barrel should be frequently oiled, the oil being immediately wiped out with a dry cloth, wrapped round the cleaning rod. Neat's-foot oil is best for the locks, and linseed oil is recommended for the stocks, but it is so offensive, that we prefer olive oil.

CHARGING.

It is not usual to charge the gun until arriving at the shooting ground. When there, however advisable on the score of caution it may be, flashing off a quantity of powder to clear out, dry, and warm the gun before loading, has certainly a cockney appearance ; the more sportsman-like practice is,—the party having reliance on the person who cleans his gun,—merely to permit the ramrod to fall lightly to the bottom of each barrel. The barrels are then held as perpendicularly as possible while the powder is poured in, so that nearly the whole charge may reach home, and not adhere in its descent. The barrel is then tapped with the ramrod, or the but slightly shaken against the foot, that powder may find its way into the pivots,—this is the more necessary when coarse-grained powder is used. A wadding is then gently pressed down. The shot is next poured in, and a slight shake of the gun in an upward direction causes it to lie evenly;—a wadding is pressed upon it. The shooter next removes the remains of the caps, and looks whether the powder has found its way to the orifice of the pivots, and if it has, he places fresh caps on; if powder is not visible at the orifice of the pivots, he removes any obstacle with a pricker, and contrives to push down a few grains of powder. It is very material to attend to this point, to prevent miss-fires.

THE WIRE-CARTRIDGE.

The wire-cartridge was invented in 1828 by Mr. Jenour. It consists of a cylindrical case or net-work of wire, the meshes of which are somewhat more than an eighth of an inch square; at the lower end the wire partially closes; the wire case is then enveloped in fine paper, and at the upper end a cork wadding, cut so as to fit the gauge of the gun, is affixed; the case is then filled with shot and bone dust. The first cartridges made, though ingenious in construction, were defective in operation. It was a matter of no ordinary difficulty to fabricate them in such a manner that the shot should leave the case at the precise distance required. This at first could not be done so that they might be trusted in every instance; every alternate cartridge might fire well, but the rest would fire irregularly, being liable to ball,—that is, the shot would not leave the case until fifty or sixty yards from the gun, and such cartridges were, of course, not only useless but dangerous. They have been from time to time improved, and almost every difficulty has been overcome. The sporting cartridges now made never ball, they act with a considerable degree of precision and certainty, and that they may be safely trusted may be inferred from the fact that they are often preferred by persons engaged in pigeon matches. Various materials were used experimentally to fill up the interstices between the pellets, but nothing seems to answer so well as the material now used. Another difficulty in their construction presented itself. It was requisite to accommodate them to the various methods of boring pursued by different gunmakers, and the unequal length of barrels, the object in view being to produce a cartridge that would suit all barrels of the same gauge, and this has been in a great measure, if not wholly, accomplished. The liability to ball which, notwithstanding various improvements made in them, was not effectually obviated for many years, during which they were tried, and in many instances prematurely condemned, either from real defects, or from the parties not knowing how to use them. They were not brought to perfection until the year 1837.

The wire-cartridges possess two principal advantages over loose shot; they are propelled with greater velocity, and thrown more evenly. A loose charge is always thrown in patches; the shots of a cartridge, as seen on a target, are comparatively equidistant from each other. There are four classes of wire-cartridges, which the patentees have named the *battue*, the *blue*, the *red*, and the *green;* each intended for a different range. There is some little difference in the construction of each of the three kinds; the meshes of the frame-work are larger in the battue and the blue than in the red, and in the red than in the green, and there are doubtless other differences not perceptible to the uninitiated. The battue and the blue cartridges are intended for general use; the battue for the shortest distance; the blues will kill several yards further than loose shot of the same size, and, of the four kinds, are, in our opinion, decidedly to be preferred; each blue cartridge being thrown more nearly alike, they are more certain in their operation than the red and the green, which are intended for longer distances. The red may be serviceable in open places, when game is wild, and the shooter is provided with a gun of not less than fourteen gauge, or with a very short barrel, which does not throw its shot very strongly. The green cartridges are intended chiefly for wild-fowl shooting; these should be used in barrels of not less than twelve gauge. The red and green cartridges retain the shot in the case longer than the others, and are carried with an astonishing force to an incredible distance, and at the same time very closely. The red may generally be trusted for long distances, especially from barrels of large calibre; but at short distances the smallness of the circle they describe renders them objectionable. The green cartridges should never be used for shooting game. The blue and battue only should be used in barrels of small gauge.

The cartridge does not require either a greater or less charge of powder than loose shot, but there is this peculiarity attending it;—a heavy charge of powder throws the shot from the cartridge more closely than a small charge, by reason of its allowing more time for the escape of shot from the net-work. This is exactly the reverse of the manner in which the loose charge acts. The greater the charge of powder when loose shot and wadding are used, the more is the shot dispersed, and *vice versâ.* Either loose shot or cartridge shot is projected with greater force and velocity when a heavy charge of powder is used. When birds lie well, we would recommend the shooter who adopts the cartridge to charge lightly with powder, in order to give the shots time to spread well; but when birds are wild, he should charge with as much powder as the shoulder can conveniently bear, so as to give the greatest possible force, and at the same time the greatest practicable degree of closeness. It is at long distances only that the superiority of the cartridge is conspicuous.

Amongst the advantages attending the adoption of the cartridge, it may be mentioned, that the recoil is not so severe, and consequently a lighter gun may be used than with the loose charge, and this is a great relief to the shooter in a heavy country, and especially on the hills in August, when the heat of the sun is frequently overpowering. The cartridges act well when fired from short barrels, perhaps more satisfactorily than when fired from long ones. The increased facility and expedition of loading is another advantage which should not be overlooked.

The main objection to the cartridge—and it is a material one to a person who is an indifferent marksman—is, that it does not describe a sufficient circle at short distances. When game is wild, the cartridge is invaluable for the reserve barrel of a double gun.

The wire cartridges usually kept on sale contain, for the different gauges, the following weight of shot:

Calibre.	Weight of Shot.	Calibre.	Weight of Shot.
20	$\frac{7}{8}$ oz.	14	$1\frac{1}{4}$ oz.
19	1	13	$1\frac{3}{8}$
18	1	12	$1\frac{3}{8}$
17	1	11	$1\frac{1}{2}$
16	$1\frac{1}{8}$	10	$1\frac{3}{4}$
15	$1\frac{1}{4}$		

When ordering cartridges, it is necessary to give the *gauge* of the barrel, the *weight* of the cartridge, the *size* of the shot, and the *kind*,—that is, whether battue, blue, red, or green.

The green cartridges, fired from a common-sized fowling-piece, are not to be depended upon for any distance nearer than fifty yards; and, for that reason, they should only be used for wild-fowl shooting, for which sport they may answer very well when fired from a reserve barrel. We would not recommend their adoption, even for wild-fowl shooting, to a person using a common-sized single gun, since by so doing he would hazard missing when the most favourable opportunities of killing presented themselves. A No. 3 red cartridge would suit better.

The wire cartridge has been proved to be much superior to the loose charge for the stanchion and heavy shoulder-guns used on the sea-coast and rivers. For the largest shoulder-guns, B or BB loose shot, or a No. 1 cartridge, is usually adopted. AA loose shot, or a B or No. 1 cartridge, will better suit the stanchion-gun.

CHAPTER X.

TAKING AIM.

WHEN the dog points, or when birds rise near to the shooter, he should immediately draw back both hammers with the right thumb; * but should the birds rise at a considerable distance, to save time, he need only cock one barrel, as in this case he has only to fire once. He should never be in haste;—it is more prudent to let the bird escape than to fire hastily. If on open ground, he should not fire until the bird is more than twenty yards distant. He should be deliberate in bringing up the piece to his shoulder, and in making it to bear on the object, but the moment he has brought it to bear, the finger should act in co-operation with the eye, the eye be-

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* Many experienced sportsmen disapprove of the practice of cocking both barrels at the same time. They think that it ought to be a rule never to cock either barrel, until the game be upon the wing, then that the left barrel should be cocked and fired, and thereafter taken from the shoulder. The right barrel should then be cocked and fired, if necessary; if not discharged, it should be put back to the half-cock, and the left re-loaded.

ing kept open the while, so that the shooter may see whether the bird falls, or feathers fall from it, for if he does not see it distinctly at the moment of firing, there is something defective in his system of taking aim.

The shooter, when learning, should never aim directly at the body of a hare on foot, or of a bird on the wing. This precaution is scarcely necessary when the motion of the object is slow, but by habituating himself to it on all occasions, he will the sooner become an adept. His mark should be the head, the legs, or a wing, if within twenty yards. When further off, he should make some allowance, according to the distance and speed of the object moving. His aim should be at the head of a bird rising or crossing—the legs of a bird sprung on an eminence and moving downwards from him—the wing of a bird flying from him in an oblique direction. His aim should be at the head of a hare, in whatever way she may be moving. The same rules apply when the object is more than twenty paces distant from the shooter, making allowance for the speed. Thus, for a partridge crossing, the allowance of aim before it with a detonator, at twenty paces, will be one inch —at thirty paces two inches—at fifty paces five inches —at fifty-five paces seven inches. Half this allowance will be proper when the bird moves in an oblique direction. When an object moves directly from the shooter, at more than twenty paces distance, he should fire a little above it. When a bird or hare approaches the shooter directly, he should not aim at it until it has passed him, or has turned aside.

The moment it has altered its course the gun should be brought up, and no time should be lost in firing.

It is not easy at all times to form a correct idea of the distance of a bird from the gun. The nature of the situation, and the state of the weather often deceive the eye. Thus, on a bright day birds appear to be near, and on a dull day distant. It is much easier to estimate the distance of a bird in small inclosures, where hedges or trees serve as guides, than on open ground. The hedges, indeed, tend to deceive the unpractised eye; the object is supposed to be much further off, while on open ground it is supposed to be nearer than it really is. It is often very difficult to determine whether a grouse is within range; and sometimes the mist increases the difficulty, for then the bird is either scarcely seen, or else magnified, by the sun's rays gleaming through the mist, to an unnatural size. In general, grouse are further off than they are supposed to be. The shooter, however, has a peculiar sight: every bird he brings down, in good style, is at sixty yards distance. It is amusing sometimes to hear persons talk, after they have been *watched*, of the distances at which they have effected their shots; they ever think the game so much further off than it really was. The sportsman who has not convinced himself by actual measurement, often seems to be labouring under a species of hallucination when speaking of his distances, and, if he bets on them, to a certainty loses. Birds killed at fifteen paces are thought to be at twenty-five, and those at twenty-five are estimated at thirty-five or forty, and so on to the end of the story!

When a covey or brood rises, the shooter should fix his eye on one bird, and shoot at that bird only. He should not be diverted from it by other birds rising nearer to him while he is bringing up his gun, unless the bird he first set his eye upon be decidedly out of all reasonable distance, so as to render the chance of killing exceedingly remote. By observing this rule, he is not only more certain of bringing down his game, but he will more frequently kill the old birds—a desideratum, for two reasons; first, because he will, in all probability, disperse the covey, which being done, any sportsman may generally, without difficulty, bag a few brace; and secondly, because the old birds make a better show in the game-bag.

We think that the generality of shooters use a gun properly as regards throwing the end of it upon the object aimed at, and drawing the trigger, and that any inaccuracy of aim must be attributed to the eye not being in the proper place when the aim is taken.

The habit of missing seldom arises from inability to throw the end of the gun upon the bird; but from the eye not being directly behind the breech, which it necessarily must be for good shooting.

If there were a sight at each end of the barrel, it would be requisite, when taking aim, to keep shifting the gun until both sights were in a line between the eye and the mark; that, however, with a gun not well mounted to the eye and shoulder, would be too complex an operation, for before it could be performed, a swift bird would be out of reach; it follows, then, that the shooter's attention should be directed only to the sight at the top of the barrel; and the breech end should come up mechanically to the proper level.

If the sportsman will take aim alternately at objects on his right, on his left, on the ground, and in the air, without moving his body or taking his gun from the shoulder, he will at once see the difficulty of keeping his eye directly behind the breech. To be a proficient in shooting, he must in some way be able to do that mechanically; for, when aiming at a moving object, his attention can only be paid to placing the end of the gun on that object. When bringing up a gun to the shoulder in a gunmaker's shop, it is easy to bend the head down to the exact spot for looking along the sight-plate; but it is very different when shooting at birds on the wing. The best way to prove whether a stock suits, or in other words, whether the user of it can bring it up, as it were mechanically, and without an effort, to the proper place, is to fire hastily, on a dark night, at a lighted candle placed against a wall, at about forty paces distance.

When a person is nervous, or afraid of the recoil, he naturally raises his head, and consequently shoots above the mark; on firing, he unconsciously throws his head back, and then seeing the bird above the end of the gun he fancies he shot under it, when the reverse is the fact. We may also observe, that if the shooter does not keep his head down to the stock, he will probably draw it aside, so that his aim will be as if taken from the left hammer, which would, of course, throw the charge as much to the left of the mark, as raising the head would above it.

The main point, then, in taking aim, is *to keep the head down to the stock, and the eye low behind the breech.* The sportsman who, from habit or practice, can invariably bring his eye down to the same place, and keep it steadily there, so that he always begins the race from the same starting-point, will distance all competitors.

"*Aim straight!*" says the keeper, when the young 'squire first takes the field. The rustic, in two simple syllables—rather brief than classical—gives the first and last lesson that needs be taught. Do you miss because the gun is not of the precise length and gauge, or because the shot is a size too large or too small, or, peradventure, because the stock is not bent enough? No such thing—you do not *aim straight!*—How fraught with instruction is the keeper's advice!—What philosophy in that axiomatic phrase! Patient reader, you may now close the book;* it is useless conning over long treatises on the subject when the whole art and mystery—all that need be learned—of shooting is embodied in these significant words—*aim straight!*

POSTSCRIPT.—In the treatise on shooting in the Encyclopædia Britannica, of which the foregoing pages are an amplification, we ventured to recommend the use of short light guns and very large shot. In advocating the former, we had chiefly in view the comfort and convenience of the sportsman, and in adopting the latter, we thought that we could dispense with that weight of metal which is absolutely essential to shooting small shot effectively. We are now in favour of a heavier gun, on the ground that the advantages derived from its superior shooting power overbalance any arising from a short light gun's greater aptitude to snap shooting, and its not being so tiresome to carry. The most effective weapon, provided the shooter can carry it, is the sort of gun recommended by Colonel Hawker, barrels not less than 32 or 34 inches long, and 14 gauge, and the whole weighing 8½ or 9 lbs. Such a gun is, however, by far too cumbrous for some purposes; we would, therefore, select as a medium size, were we never allowed to change, barrels 32 inches long and 15 or 16 gauge, the gun weighing 8 lbs.; and, as we have discarded very light guns, we have likewise discarded very large shot, which is suitable only to very light guns, or to long heavy single-barrelled winter game-guns, or duck-guns. When we say that we would recommend for a 9 lb 14 gauge gun No. 5 or 6 shot, for an 8 lb 16 gauge No. 4 or 5 shot, and for a 7 lb 18 or less gauge No. 3 shot, the reader will perceive that we are starting a new theory, inasmuch as the rule has always been to increase the size of shot in direct proportion to that of the bore. Should the sportsman who uses a light 18 gauge gun be tempted to fire at as great a distance as his companion with a heavy 14 gauge, he must use larger sized shot, or it will not penetrate beyond skin deep, while that from the heavy gun kills. The light 18 gauge gun cannot be made as effective as the heavy 14; but by adopting large shot, the light gun is made somewhat to approach to the heavy gun, and will sometimes kill as far. It may be asked why, if the light gun is increased in efficiency by using large shot, should not the heavy gun be so also? We answer, because the shots from a large bore spread more than from a small one, and birds would frequently escape at forty yards between the pellets. The superiority of a large heavy game gun does not so much lie in its power of killing further, as of covering a larger circle, and in the great power generated admitting of the use of small shot, which spreads so regularly over that circle, that it is scarcely possible for a bird within it to escape. A light gun has not power enough to do this beyond thirty or thirty-five yards; therefore larger shot must be used, though it is sacrificing occasional near shots for the sake of making occasional distant shots. We have been long endeavouring to cheat ourselves into the use of a short light gun on the score of convenience, but it will not do: length of barrel for accuracy of aim is indispensable. A heavy charge of shot of too large a size flies too slowly for cross shots; we therefore no longer use *very* large shot (No. 2) in double-barrelled game guns; but we cannot yet subscribe to the use of shot so small as No. 7. Large shot answers well in single-barrelled game guns that are long enough to hold it well together: and all guns larger than 14 gauge may be charged with a size of shot large in proportion to the bore; because, from their increased capacity, a much greater number of pellets may be fired from them at each discharge. No. 2 is the best size for a single gun, the barrel of which is not less than 36 inches long; but it spreads too much when fired from a double gun of 30 or 32 inches, unless only a very small quantity of powder is used, when, as we said before, it travels too slowly to the mark for successful shooting at objects crossing. A double-barrelled game gun of the most desirable weight and length, we think, shoots No. 5 as well as any other from the first barrel, and No. 3 from the second. We should prefer a close shooting-gun, *i. e.*, one that shoots No. 7 (equal measures of powder and shot) closely: a gun that will do this will spread No. 5 (one-third more shot than powder in measure) in an effective manner, because the larger the shot the more it spreads. A gun that shoots No. 7 shot very closely is usually a weak-shooting gun, but want of power in the gun is compensated by the weight of the pellets when No. 5 is used,—each No. 5 pellet being nearly twice as heavy as one of No. 7. Mr. Delabere P. Baine, in his work on Rural Sports, expresses an opinion that the largest size of shot which, on being fired at a target, will garnish, is the best. We think he is right as regards guns of upwards of 8 lbs; but a lighter gun must have a larger pellet than will garnish. The largest shot that from the average of guns will garnish, or, in other words, dot the target so that there are few spaces in which a bird would escape, is No. 5.

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* But first read the Postscript.

THE END.

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